The Builder.

SATURDAY, MAY 20, 1854.

THE antiquities of the remarkable people who crowded 1,200 miles of the narrow valley of the Nile, have received less attention from architects than their importance demanded, and has obtained from others. Yet, no clear apprehension of the conditions of the history of architecture—such as every one should possess, for the formation of correct taste—no such valuable possession can be present without previous attentive study of Egyptian art. Reflections of a state of civilization in a remote period, the tangible evidences of "the wisdom of the Egyptians," are vivid in their portraiture, as they are vast in extent. In the reign of the first Pharaoh of the Bible—Osirtasen I., about B.C. 1740—the Egyptians were acquainted with mechanical contrivances and chemical processes, which are amongst the most valuable in modern industry. Some of the chief forms of later styles of architecture, and ornamental details now in general use, are to be found in the monuments, the household fittings, or the personal ornaments of the people of Egypt.

Little indeed can be understood of the character of Egyptian architecture, or of the lessons which may be gleaned in its true home, by examining the experimental essays made in England. The Egyptian style has been treated too much as we have treated other styles,—just as, in fact, no *one* should be used. To merely transport the forms of one school to a new soil, or to attempt a combination such as that of the Greek portico with stories of factory windows, will ever be fruitless labour, or one of the evidences of ill-formed taste.

Egyptian architecture has its appropriate home in the sultry and rainless climate of Egypt. Let us properly regard the luxury of shade in such an atmosphere, at the edge of the desert; and those who have not seen what the encroaching sand has left of ponderous columns and gigantic *propylæa*, may realise the fact of the impressions which are brought away by all others from the land of Egypt. The best substitute for actual inspection that we have met with, is afforded by the fine French work by Maxime du Camp,—one which, we may say, suggests that we in England have still much to do with the aid of photography. Such illustrations, however, fail to give the polychromatic decoration—an important feature in Egyptian architecture.

Colour in mural decorations, and other elements in the works of art, were intensely symbolic; whilst in Grecian architecture, though the colours appear to have been the same, the æsthetic object is generally considered to have been paramount. The questions suggested by these facts would extend into a wide field, yet one to which we may perhaps have to return, when we speak of the Greek Courts. We will now merely say that the cause of failure in the effect of Grecian Doric architecture in this country, would be attributed by some, to the absence of what these authorities hold to have been an important element in the Greek orders, and one especially required in the treatment of the unsculptured surfaces which characterise the echinus and other mouldings of the Doric. We will not now enter upon that part of the vexed question of polychromy, nor touch that which the Crystal Palace authorities and their advisers have opened out by the colouring of the Elgin frieze. We only say, that where colour was confessedly on all sides, an object of attention, it is useful to have means of judging of its effect on a somewhat greater scale than that of a few book illustrations; and this has now to some extent been done in the Egyptian Courts at Sydenham.

Still, little can be learned from the few diminutive columns, and the hieroglyphics, paintings, and sculpture,—little compared with the wealth of the story that the arts of Egypt have to tell. Amongst the forms of column and entablature which are exhibited, we find that which may have been the first step to the Doric order, and to which attention was originally directed, by a sketch by Sir Charles Barry, but we miss the pictures of Egyptian life and manners, which the same rock-hewn tombs of Beni-hassan retain. An adequate presentment of ancient Egypt must be derived from works such as those of Rossellini, and Sir J. Gardner Wilkinson, or gleaned from the treasures of the museums of London and Turin. Owen Jones and Bonomi, in a space of 120 feet by 96 feet, could hardly have shown us more. Some notion of the effect of a *vista* of columns is given by models of the smaller columns at Karnak, and great care has been taken with the hieroglyphics; but, generally, we fail to realise what Egyptian architecture was.

The error would be in considering the Sydenham courts as embodiments of whole styles, whilst they are merely, and, we believe, are not put forth as more than, consistent places of location for works of art. In the Greek Court, the Ionic order is as much absent as though a certain writer had been omnipotent there. We have no fault to find with these short-comings; they were unavoidable; we only wish to aid what may yet become a powerful engine of popular education in art, by preventing popular misconceptions.

A full impression of the character of Egyptian architecture is not to be given without an attentive study of the plans of the temples. Of the chief intention of the architects, namely, that of presenting fine effects of perspective, and an imposing mass to the procession advancing along the *dromos*, or way, little idea is given. The court of a temple, the vista before mentioned, ranged transversely with what should be the procession path, and in the north transept, the avenue of sphinxes leading up to the colossal figures, are some scattered members which the visitor must combine for himself, and acquire therefrom the real character of an Egyptian building. The propylæum, with its pyramidal masses, its obelisks, and colossal figures, is unrepresented, though perhaps the most striking feature in a temple.

The main feature next the nave, is the façade of an inner court, like that at Denderah, but with papyrus and lotus, or palm-branch capitals, bearing an entablature of the usual character. The principal entrance is approached through a short avenue, with couchant lions, four on each side. The winged globes occupy their usual positions over all entrances and central spaces: the dwarf enclosure wall, surmounted with a cornice of asps, is embellished with paintings of the stems and flowers of the lotus and papyrus, and with subjects—generally representing offerings by the monarch to Osiris. The capitals, and ornaments, and *intaglios* are richly painted in red, blue, yellow, and green. Within the court, the principal elevation has eight gigantic figures, wearing the double crown of the sovereigns of Upper and Lower Egypt, and, like all the rest of the architecture and sculpture, highly coloured. Figures so applied would elsewhere be called Persians, or Telamones; but in Egyptian architecture the figure was never applied for the support of an entablature, but was placed in advance of the piers. Within the court are copies of the paintings of the victories of Sesostris, or Rameses the Great. The casts of sculpture from our own museum, from Turin, and elsewhere, at our last visit were not arranged. The Rosetta inscription has of course a place; but here, wants the sharpness of the original stone. Had Dr. Young examined nothing better than the cast, we might have had to wait longer for the meaning of hieroglyphics. We next came to the columns of massive proportions from Karnak, with bulbous shafts, having water-plants painted around the base, and lotus-bud capitals. The shafts are reeded and banded at intervals, and have large plain spaces, enriched with paintings and cartouches. Having passed through these columns, we see, directly opposite, a model of the front of the rock-cut temple at Abou-Simbel, with the four large seated figures, and the numerous smaller sculptures. Two of these figures are those which are placed of the full size, at the end of the north transept. Near the model of the temple is a colonnade, with columns of different designs. There are here nine different variations of the papyrus, lotus flower, or palm-branch order of capitals.

We could not help asking ourselves in examining the beautiful conventionalized adaptations of natural objects, which even the severe forms of Egyptian architecture permit, these questions:—Have we not lamentably disregarded the resources which our gardens, or the sedgy nooks of our own rivers afford? Is there any reason why in this single instance of the capitals of columns, we should put checks upon invention, such as the Greeks did not attempt with all their perception of minute differences, or love of general forms? and have we not here proof of what might long ago have been derived from the study of Egyptian architecture? Is there, indeed, any objection—provided harmony and proportion be attended to as they might be—to the union of a capital of Egyptian origin with the shaft and base and entablature of a classical "order?" It is an error to suppose the ancients avoided such changes,—the Corinthian capital, which it is nearly certain was derived from the Egyptian form, is itself one instance of the reverse. The name "order" has too long induced a popular error as to the real facts, in all the classical styles. But the Egyptians carried the love of variety to a greater extent than we have here shown. Except in certain cases, the columns on the same side of a temple were varied in their capitals. Opposite capitals in a court, or those in corresponding positions elsewhere, were, however, the same—this being supposed to indicate the union of Osiris and Isis. The story of the death of Osiris, murdered by his brother Typhon, and the collecting of pieces of the body by Isis, is an interesting fable. The men of Egypt swore "by him who sleeps at Philæ," whom they dared not name, and the island of his supposed sepulchre became the site of numerous temples. Isis was no less honoured and feared. Her statues bore this inscription:—"*I am all that has been, that shall be, and none among mortals has hitherto taken off my veil.*" At length temples were erected to her sole honour; and in these, uniformity in the capitals is the rule, as at Denderah.

Proceeding with our description:—North of the model of the rock-cut temple of Abou-Simbel, and forming the separation from the Greek division, are two columns and entablature of the late style of the Ptolemies. They have the Isis head, supporting the small shrine, together forming the Denderah capital, under these being placed what might be called a second capital, formed of leaves, with considerable projection. This arrangement is one of those called by Sir J. Gardner Wilkinson, "Composite." If, as he says, the ordinary Isis capital, though chiefly of late date, was used as early as the eighteenth dynasty, it might appear to offer one suggestion towards the origin of the Ionic capital. At the angles of the small shrine, in fact, there are volutes, though reversed from the direction which would seem to be that of "the horns of the altar."

The volutes of the Persepolitan capital, on the contrary, fall outwards; but the connection between Egypt and Persia being matter of history, the germ of the idea of the Ionic capital, like so many of the positive forms of Grecian architecture, would seem to have been in Egypt. In the Persepolitan capital, the conjoined volutes have only to be brought to the horizontal position, to form the true Ionic of Asia Minor.

The Egyptian Courts were originally intended to come second in the series, and a great deal has been said in the newspapers about the interference with the order of chronology. On this, however, as we said the other week, opinions vary. The space originally devoted to the Assyrian Court, next the central transept, or part of it, we have scarcely mentioned. Of that part, one portion is arranged to represent the fluted columned architecture of the tombs of Beni-hassan, with the front of the rock, and the excavated interior, whilst another part is enclosed and divided by columns of the reeded character, with lotus-bud capitals, such as there are also at Beni-hassan, but which are much lighter in proportions than those of Karnak. Here also, the walls and columns are covered with hieroglyphics. The rock-cut front (which, no doubt, is accurately represented) differs greatly in many respects, from the view given in Gwilt's edition of "Chambers's Architecture." The mutules project slightly in comparison, and in place of the thin abacus, we have, above the shaft, the block formed by the interruption of the architrave in the intercolumns, as usual in the Egyptian style. Of other capital there is none—but there is a low plinth as base; of course, not found in the Grecian Doric. Of the entrances from the transept,—one has a porch formed by two columns and an entablature, and another has colossal standing figures. These last are good examples of the character of treatment which obtained in sculpture—the legs scarcely marked from the shapeless block, yet withal, the figure possessing a commanding aspect, and sublimity of expression, not always observed in works displaying the anatomy of limbs. Within the same doorway are seated figures, entirely coloured.

Passing to the north transept, the two colossal seated figures there are the full size of the originals, or about 70 feet in height. The avenue of sphinxes leading from the garden entrance has ten on each side, each sphinx being about 20 feet long and 10 feet in height. Similar sphinxes are placed on granite pedestals, two on each side of the flights of steps leading up from the terrace outside. Three kinds of sphinxes are found in Egyptian architecture,—the Andro-Sphinx, or man-headed; the Krio-Sphinx, or ram-headed; and the Hieraco-Sphinx, or hawk-headed. The form adopted at Sydenham is of the first kind, and is taken from the example preserved in Paris.

There is much in all this elaborate work which, as we said, may tell what could hardly be learned from books. But the whole resources of the Crystal Palace Company could not present the immensity of ancient Thebes, combining in its area structures at wide distances, once thought to be parts of distinct towns. They could not show us the oldest, and yet to this day the most interesting, but the least understood of Egyptian monuments. They could show us nothing of the domestic architecture, though not less interesting than that of temples and palaces. Were ancient manners and habits to be set forth as part of the ethnological series, what would contribute matter so ample and so interesting as the wall-paintings of Egypt? That most beautiful expression of simplicity in invention, the obelisk, is still unrepresented by Cleopatra's Needle. And imagination, aided by the "Epicurean" of Moore, must depict for us the 3,000 chambers of the labyrinth.

An error has, it seems to us, been made in the use of the feature called a screen of columns. The roof was no less required in Egypt than in rainy climates, and in any case we cannot judge of the appearance of buildings without it. This is not merely where the roof is a sloping one; the terrace roof was not only a dormitory at night and a place of exercise when the sun permitted, but was essential to the coolness of the interior and to the fine effect of shade. We would also say, that as the inferences, delineations in the wall-paintings, and positive remains, go to prove the knowledge, if not the general use, of the arch, we would have had the fact set forth somewhere, if only to rebut the repetition of exploded dogmas. Mr. Fergusson has, we see, introduced it in the court under his charge.

It is not difficult to understand how the Egyptian style may have sprung up, and we think the result of an inquiry into this subject should lead us to avoid the error into which writers have sometimes fallen, in ascribing to some one type or another, origin which should be looked for in a combination of influences. How seldom in our own day can we reach the kernel of original thought: how seldom can we trace back to the single stream, and the gushing forth from the native rock. The Greeks, indeed, had a story to relate of every invention. Calling themselves *autochthones*, earth-born of their country, they did not pursue the inquiry into, or they concealed, the origin in the land of Egypt of some of the chief forms which they used. We, however, who have historic evidence of the colonizing of Greece, that the learning of the "wise men" was drawn from the banks of the Nile, that constant communications took place between the two countries, and that many Greeks resided in Egypt, and that some even intermarried with the sovereigns—we should need little more to upset the Grecian fables, even did we not observe certain resemblances in the two styles, and had not many late researches brought to light the positive forms of some of the chief Greek ornaments.

The Egyptian column as we find it, was not moulded from the type of the slender post of a hut (though that character of form was seen, the height of several stories, in the domestic habitations), it was not taken from the Nile plants solely, nor from the forms of excavated habitations. The Egyptian architect observed all, reformed and adapted the materials, and became the *author* of the work.

Since the rock-cut monuments of Egypt are amongst the most curious of the antiquities, it is interesting to show that an order of columns might be the natural result from the pieces left for the support of the mass above. Such examples remain. By taking off the angles of one of these, we get an octagonal pier, and by again taking off the angles, we have sixteen sides, — the number of the flutings of some of the earliest Grecian Doric columns. The theory is, that the surfaces thus formed, became the places for painted representations of the leaves and flowers of the water-plants. These forms were afterwards sculptured, and then, still adapting from nature, the sides of the column took the shape of reeds, the whole pillar, its base, and capital, having the form of the stem, root, and bud of the lotus. The painted ornament round the bases of the columns at Sydenham, will be seen to be exactly like the roots of the water-plants as shown in the British Museum, in some wall pictures, in which all the natural forms, except the human figure, are clearly and skilfully represented.

It would require very little adaptation and combination to produce the Grecian Doric from the polygonal and lotus-bud capitals. The bud supports an abacus, and if we drop this by cutting off part of the bud, we have the abacus and echinus of the Doric. The annulets, also, have their prototype in the binding cords which were imitated in the Egyptian capital. Some, however, have likened the form of capital to a bundle of reeds tied together at the top, and weighted down. That the Greek temple owed much of the form which it ultimately took, to the hut, is possible, without necessarily invalidating this reasoning; and indeed Pausanias records that the oldest temples which he found in Greece were of wood. What we try to show is, that in both countries the architectural forms were derived from several sources. In the tombs at Beni-hassan, the mutules were no doubt suggested by wooden rafters. The ends of poles are imitated in the Lycian tombs. In the same way, notwithstanding the difficulty of the case, as to the ends of the building, and as to the angular triglyph, it seems to us more likely that the Doric triglyphs were suggested by the ends of beams, than by the ornaments on the entablature of Egyptian buildings.

It is to be observed, that the lotus-bud and the polygonal columns of Beni-hassan are of the same date—that is, be it also recollected, in the early and ante-Grecian age of Osirtasen I.

We have spoken of the polygonal column, the lotus-bud capital, and the Isis capital, as making the distinctive features of what are sometimes called orders. We have, however, named other modifications. One form is, that of the lotus-*flower* rather than of the closed bud,—the "bell" of the capital having the same section as the cymatium moulding in later styles. What may be called the palm-branch capitals have the section in form of the overhanging branch of the palm-tree. Both these varieties were decorated with flowers and leaves. The Isis capital has been mentioned, and one of the kinds called Composite. Occasional use was made also of a pilaster surmounted by a cow's head.

If there are points of resemblance in the main architectural forms of Egypt and Greece, there is even greater resemblance in the details. The zig-zag, of constant occurrence on Greek vases, was with the Egyptians the symbol of water. The original of the Greek fret is found on ceilings in the tombs at Thebes, and was a symbol of deep significance. The wave scroll which beautifully terminates the Choragic monument of Lysicrates, is also found in Egypt; and on the side of a palanquin figured in Sir J. Gardner Wilkinson's work, lotuses of the mystic number seven, growing from the symbol of water—the sign of Aquarius,—take the form of the Greek honeysuckle.

Both brick and stone were used, and stucco was common, and was applied sometimes even to granite. Many rare woods were employed in cabinet work; and when these were beyond the means of persons, painted imitations were not objectionable in the eyes of the Egyptians. We find that with them, glue was used more than 3,000 years ago, and many other materials and many processes of modern times. Glass was blown and used in the time of Osirtasen, long before the date of the discovery, according to Pliny. Nay, one very recent invention seems to have been anticipated, in the introduction of a film of gold between two surfaces of glass. Linen and cotton fabrics, and embroidery, pottery, armour, and furniture were manufactured of great excellence as to durability, and with no slight consideration for beauty of design. The process now adopted in the printing of calicoes seems to have been known. In naval architecture, the accounts show that the ships — built of wood — would compare in dimensions, and surpass in magnificence of decoration, some of the most important of our recent works.

In the representation of the human figure alone, was the evident skill in drawing held in restraint. In the execution of a painting, the wall was divided into squares, and each member of the composition was filled in, in a given way, —the profile and front view being mixed together in the same figure in the peculiar manner, known to our readers, but hardly within our powers of description. Yet so well do the figures tell their story — so much better even than modern drawings with foreshortening and true perspective—that it is said the untutored inhabitants of modern Egypt will recognise what is represented in the tombs, though they cannot understand a modern picture. The principal figure was often of colossal dimensions,—as in the wall paintings of the victories of Sesostris, and in the temple at Abou-Simbel.

It still remains to conjecture how the *intaglios* of cartouches and hieroglyphics were executed. To judge of the sharpness of their work, we must look in the British Museum rather than to the plaster imitations at Sydenham. Possibly, as it has been suggested, these *intaglios* were engraved by means of a drill and emery power. Such a tool worked by a bow, and with a moveable head corresponding with that of the modern centre-bit, was known. But the material of their tools seems involved in difficulty. Iron has been supposed to have been discovered in Greece about B.C. 1406. Was it known in Egypt previously? The question has become more puzzling since Sir J. Gardner

Wilkinson found in the quarries a chisel, not of iron, but of bronze, or rather almost wholly composed of copper. The head had become crushed by repeated blows of the mallet; yet when the chisel was found the point was perfect, though now easily turned.

Had we space, we might say much of the private life of the Egyptians, their respect shown to women, singular amongst ancient and Eastern nations; their love of flowers and music, of their religion and mythology. To the man of science, to the architect, to the archæologist and the metaphysician, a study of this wonderful people is fraught with instruction and interest. How much is there in the fact, that geometry—the science by which we traverse the waters and stretch a measure across ethereal space—was eliminated by them. What would be the state into which our civilization would fall, had we to be deprived of that which has been handed down to us from the Egyptians? As that river which flows for some thousand miles without a tributary stream, and which periodically dispenses fertility to the soil, is apart from rivers; so the people who dwelt on its banks, giants before history was written, yet never progressive since, have still a singularity of existence in the world's history, which all the pictured records they have left have not enabled us to explain. Symbolic as their arts were in everything, it is not alone the immensity of the great pyramid, which makes an Egyptian monument aptly set forth as "the watch-tower of Time, from whose summit, when about to expire, he will take his last look."

THE ENTITY OF THE IONIC ORDER, AND VITALITY OF ALL THE ORDERS.

Among the most remarkable achievements of the genius of form in the ages that are past is the Ionic order; I refer more particularly to its characteristic feature, the voluted capital. By whom it was invented, if individual inventor it had, or by what fortunate circumstance it was first hinted to the architect, it boots us little to inquire: though there is sufficient of the scroll form in nature to lead us to attribute it to her direct suggestion, it is perhaps more reasonable to consider the volute of the Ionians as the joint and gradual offspring of geometrical skill and art-genius—as a creation of science refined and applied by art. The volute, afterwards so finely developed by the Greeks, not only in the Ionic capital, but as the main charm of the Corinthian, was in requisition at a very early period of art, into which it seems to have grown imperceptibly from the human mind like a plant out of the earth. It was in some way used in Nineveh, in Egypt, in India; and, in its classic adaptations, was clung to and retained by the Arabians and other Oriental nations, as well as by every people of modern Europe down to this day; and thus furnished evidence of an instinctive affection for it—of the existence of a chord in the human heart to which such forms appeal. Its noblest development, however, and perfection of application, it received on the banks of the Ilissus, and in the triple temple of the Acropolis, where it assumes a form on which a hundred generations of men have gazed with pleasing wonder, and one wherein all whose hearts could thrill to beauty have recognised a natural grace and genuine artistic feeling. I refer to these examples, because they may be looked upon as the beau ideal of the order, by which, as the nearest approximation to perfection of form, its æsthetic value should be judged, and not by any degenerate example of subsequent times; for, strange to say, no form has in succeeding specimens of it more degenerated than the voluted capital of the second Greek order. In nothing did the Roman and Renaissance architects show their inferiority of taste to the Greeks than in the nonappreciation of these forms, shown by their mean treatment and diminution of the volute, and the singular omission of the festoon-shaped hem in their Ionic works: between their insipid and lifeless volute (a small curl at each end of a straight fillet, so small sometimes as to seem a mere accident) and the flowing and graceful curves of the Erectheum, the distance in artistic rank—in evidence of taste and imaginative power—is indeed infinite.

Those who suspect anything meretricious in the conception of the Ionic capital should be reminded that it was the chief, and sometimes the sole, ornament of the fairest gems of Attic taste; the temples in which it was employed being amongst the most beautiful in composition and design of that remarkable people, whose profound æsthetic science has engaged the research of ages, and works which have been extolled for their surpassing loveliness by the uniform voices of succeeding times. The Ionic was chosen for the great Temple of Diana, at Ephesus, and the sumptuous tomb of Mausolus, and other celebrated monuments of Asia Minor, were of the same order.

It was a favourite of Palladio, Inigo Jones, and others, acknowledged the greatest amongst modern masters; and by them and their successors down to the present day it has been extensively used, as it would probably have been yet more but for the supposed necessity for Corinthian richness and luxuriance, or rather, display of costliness on important works, to which too many eminent men have succumbed.

The Ionic is unable to vie with the luxuriance of nature, like the Corinthian; and it is inferior in expression of columnar purpose, *i.e.* capability of support, to the Doric; but it has artistic qualities that amply redeem these shortcomings: it is the most harmonious link between shaft and architrave that could be conceived—the circular line of shaft differently applied, and a most homogeneous termination to a cylindrical form.

There is something naturally pleasing in a curve of ever-varying motion, wherever seen or however relatively situated, whether in the capital, the console, or the modillion; but in the capitals that grace the Erectheum we have an assemblage of curves that, from whatever point viewed, is altogether unique, and which for harmony has perhaps never been equalled. The delightful combination of unity and variety in the geometrical or logarithmic spiral of its volutes, diversity of curvature and increment regulated by unity of law, joined to the motion and play of curves generally, constitute a total of linear and formal grace that no unprejudiced eye can behold without at least a pleasing interest.

Like its eldest sister, the Ionic disdains "the foreign aid of ornament;" in other words, it is independent of all imitations of natural organization, whether of leaf or flower, and trusts to the beauty that is born of pure form; and as a harmony of form only, its capital is more purely a creation, and therefore a greater triumph of art-power than that of the Corinthian itself.

Than this feature, indeed there is perhaps nothing more interesting to the cultivated eye in the whole range of architecture. There is motion and flow of lines,—but motion so gentle and flow so peaceful, or ordered and regulated by such beautiful and serene law, as to combine the graces of action with the softness of repose.

Qualities, these, by the way, which render it a happy metaphor in the architectural poem it illustrates, and gives it a high value as a material exponent or type of certain moral perfections. While the Corinthian belongs to the passions and the senses, the Ionic may be said to express their silence, and shadow forth the tranquillity of Contemplation and Philosophy; and this suggests its suitableness as a feature of colleges and educational establishments, as well as in public libraries. It was the sepulchral order of the Ionians; and as Le Clerc observes, is suitable for all places dedicated to peace and tranquillity; an opinion evidently coincident with that of the ancients, who significantly employed it in the Temple of Concord, as they did also in shrines consecrated to females; and among the Egyptians it is remarkable that traces of it are particularly observable in those temples dedicated to Isis. But the Ionic expresses another important quality, viz. purity; it is the very soul of chasteness, and is to the Corinthian (adapting Sir Henry Wotton's simile), as the sedate matron to the courtezan.

Some have supposed the Ionic capital to be a representation of elasticity, and as such have charged it with being obscure and inconsistent in constructive meaning; but I do not believe its inventors would have made so great a mistake as the attempt to express in stone a quality which it is adverse to the nature of stone to exhibit. I believe it was not intended to have any constructive meaning—that the volutes were merely a beautiful accessory, and that the abacus which was always distinctly marked and had a natural and obvious use, was the real capital of utility. The Greeks probably wished the Ionic to be a relief from the strong energetic expression of the Doric, and aimed in its design at abstract beauty of form,—a meekly aspiring nobleness and purity.

It is true that the want of facial uniformity in the Ionic capital subjects its application to some limitation; it being compulsory on the architect either to avoid using it in situations, as in prostyle porticoes, where a returning face is required, or to make the capital of the angular column an artistic monstrosity by turning one of its volutes diagonally and bringing two voluted faces into conjunction. But the condition of using the Ionic order only in situations requiring no returning face, may be very cheerfully submitted to, as, fortunately, such situations are tolerably frequent; for besides mono-prostyle porticoes, it is applicable to cyrto-style, or semicular porticoes; to cyclostylar compositions, or circular peristyles generally; and to porticoes in antis, or recessed loggias, which latter suggest the expediency of introducing square pilasters, with anta-caps, in lieu of columns, to the angles of prostyle porticoes exceeding one inter-column in projection from the building.

The difficulty in question is solved in interiors by the possibility of always in such situations resorting with strict propriety to the antæ accompaniment. To interiors the Ionic order is particularly adapted; and there it was frequently used by the ancients in Doric structures. Moreover, it must be granted that the European Greeks acted with their usual wisdom in restricting as they did the employment of the Ionic order to their smaller edifices, a gemlike brilliancy and elegance of line being its most striking attribute.

And this recession of the Ionic column between antæ, in recessed loggias or propylean entrances, while it supersedes the necessity for generating the mutilated form that disfigures the temple of Fortuna Virilis, gives new beauties to the order, beauties it could not otherwise receive: to such treatment it seems peculiarly adapted; the dissimilarity between its front and side faces pointing to that situation as its fitting and legitimate home, wherein it receives a heightened effect by the contrast with the anta-caps, the rectilinear plainness of which communicates to the volutes a more brilliant and gem-like glow than they could otherwise exhibit. In fact, the beauty of the Ionic capital is but half revealed till thus brought into harmonious contrast with the anta-caps, which should therefore be employed to all pilasters placed in connection with Ionic columns, whose effect they enhance, while they secure to the composition generally the fullest variety of intonation.

The one-horned capital, though not without its advocates among judicious writers, is, it cannot be denied, an artistic abortion that must ever be painful to the eye of taste; but there is no necessity for its existence in the world of art, nor even, in order to avoid it, for the injurious modification of a design or abandonment of any necessary arrangement or felicitous idea in respect of plan, the Ionic not being the sole order of architecture.

I have all along, in treating of the Ionic order, regarded its capital as consisting of the two voluted and parallel faces with baluster returns, which make up the celebrated Greek examples. I do so, not that I consider this form as alone defensible: I regard the Scammozian and other four-faced Ionics as valuable inventions, possessing a species of beauty; but these being more closely allied to the Corinthian and to the class called Composite than to the Erectheum and Ilissus Ionic, in which the dissimilarity of front and side is the chief and distinguishing characteristic, I consider the advocate of Ionicism has little or nothing to do with them.

I think it important that this distinction should be made; for though the uniform capitals are beautiful as varieties, especially the concave-

sided example of the inner order of the temple of Apollo at Bassæ, which has a classic chasteness and simplicity that the others so much lack, and useful in meeting the angular difficulty before referred to, yet in them you cannot have that full development of the volute, nor that general simplicity and placid grandeur,—that unaffected dignity and grace which gives the surpassing beauty and expressional value to the Athenian examples. Besides, it is to this facial diversity, as the trait most divergent from the other orders, it is mainly indebted for its place as a distinct order.

My first object in this essay is the vindication of the right of the Ionic to rank among the orders of architecture: I have pleaded only its beauty; but he who lifts any corner of the veil of mistrust from its beauty proportionally forwards this aim, since

"Beauty is its own excuse for being."

I say to rank among the orders; but it really matters not whether we regard Ionicism as inhering on a distinct order, style, or system, or as merely forming a variety of an order or system. That what we call the Ionic order is beautiful architecture, or a beautiful element of architecture, is all we need in reality to prove. Perhaps, strictly speaking, there is but one real order,* and the rest are variations in proportions of height to diameter, in which graceful ornaments in the shape of volutes or foliage, or both, are added to the forms of necessity. If so, the Grecian Doric, whose general form is that dictated by utility, the form with which an engineer would prop a warehouse or support a railway bridge, is the column or order in its nude essential grandeur, or, if conceived of as dressed, in its working dress; and the other two are its more elegant æsthetic offspring, the Corinthian capital being only an elongation and foliation of the Doric echinus,—the Ionic its conversion into the convolutions of the volute; while the abacus, the Doric form of which is too essential to all columns to admit of much modification, is preserved in both. Perhaps the Ionians had no idea of inventing a new order, or supposed they had done more than reproduced the old one in a gayer dress.

But supposing this to be the true theory, and that what we call orders are to be regarded only as variations,—not genera, but species, they are not the less valuable, and we can suffer none to be extinguished that are really beautiful, though increase among the varieties of the orders may be had beyond three or five or any number or degree now dreamt of. Premiums have been offered for a new order, as if that were the great desideratum; but a man may open a fresh vein in British architecture, and strike a new chord in the human heart by the combined beauty and originality of his conceptions, without inventing what is generally understood by a new order. Besides producing new and original general designs and compositions, he may be constantly delighting the world with new varieties of capitals and other features of his ordinance; his mind, like the vital principle in nature, may be constantly and everywhere breaking out into new forms, and need not run into old channels. But so far as capital is concerned, many distinct varieties have been already produced: the Gothic and Byzantine builders invented a host of them, many of which are very beautiful. This inventiveness of the Gothic builders, and which we must regret had not to a greater extent characterized the Renaissance architects, we may, in recovering lost ground for the art in the first place, avail ourselves of, by taking possession of their inventions; for I believe that much of the variety, and beauty, and life we admire in the Lombardic and Byzantine capitals, and that attached to those of the Gothic, might have been retained in classic architecture. I have frequently been charmed with the classic chasteness of many of these capitals, the immense variety of which show the vitality and plasticity of the architecture of the ancients, and what it might and would have been, had the same singleness of aim, enthusiasm, and natural freedom of mind been applied to it. Few of them are essentially or exclusively Gothic; in many the classic chasteness of character is scarcely touched; and so little is the departure from antique purity of form, that they might be adopted at once into the Greek and Roman families; and if, instead of labouring at the production of a new order on the one hand, or reducing what we have to stereotyped formulæ on the other, our architects had been employed in seeking hints for varieties from existing works in other styles—in ungothicizing Gothic, and bringing back Romanesque to its original simplicity, much better would have been the result. The very worst of these may at least touch the imprisoned springs of inventive power, and furnish the imagination of the designer, who should scorn no source for motives of thought, with materials for new images. But the architect who is a true magician of the beautiful, would take a still wider range in search of inspiration: he would evoke new orders from among the "dark red colonnades of the Nile," and even avail himself of the fanciful vigour of Indians and other Orientals, however wayward in feeling, or humble in artistic skill, till every ancient and modern style contributed something of grace or of energy to the visions of beauty he would eternize in stone. In Egyptian remains, which present infinite variety of capitals, many of them elegant in design and rich in decoration, is a grand suggestive source, in which sleep the germs of many beautiful classic varieties. It has often forcibly struck me how slight the modification that would render some Egyptian capitals into beautiful classic ones, worthy and fit associates of the chastest Greek or Roman examples: there are some foliaged capitals so beautiful in their composition, that by only changing the character of the leaves, would harmonize with those of the Lysicrates monument itself; and with respect to many another, simplify it—slightly rectify its proportions—suppress some overgrown member, and what classic beauty would stand revealed? —beauty that but for the stern symbolism of their overlaying superstitions, its designers never could have missed as they did. If in this spirit the Greco-Romano architecture had been practised,—if in its pursuit we had yielded to our instincts, which have been resisted in architecture more than in any other human pursuit, we should have had no complaints of architecture being behind the age—a laggard in the march of intellect. By the dictum of Wren, which has not been taken with sufficient qualification and reserve, that the pursuit of architecture is now rather the study of classic antiquity than the exercise of fancy, classic antiquity has been somewhat slandered: the three orders are not to be considered as patterns, mere stereotyped formulæ, or ready-made members to be incorporated in our designs, as the Constantinal builders used the executed columns and other fragments in their erections. Their use is to inspire: the best of them are but so many methods from which we may learn much by analogy; from which, by imitating different of their qualities according to the idea to be expressed, new designs may be engendered. There is no model for each order. I view the orders not as forms of definite shape, but as spirits of design, which by transmigration, as it were, into a thousand different bodies, hereafter to be organised by art, become incentives of thought and emotion to the latest times.

We talk of established forms, but many forms we have regarded as such are not established, nor were ever intended to be established. They are simply designs—illustrations of art—and we are to look upon them only as individual impressions, interpretations, and utterings of the truths of nature. So that the practice of literally copying the Parthenon Doric or Jupiter Stator Corinthian even into compositions otherwise original is not a necessity caused by any limitation in the architecture itself, but is simply an exhibition of dulness or idleness on the part of the architect, for which the practice of the ancients furnishes no precedent; for all their buildings are dissimilar, no two being alike either in proportions or details. The immense variety of capitals and other members found among their edifices, ruins, and preserved fragments, shows that they did not consider any preceding examples in the light of patterns, but that, by throwing themselves on their own mental resources, they were enabled to make new designs for every building they erected; designs in the full sense of the word new, in which no lifeless parts had place, but where all, to the smallest detail, glowed with the pure light of thought.

If this was once done, it can be done now, and we may follow the ancients as they followed each other, and breathe into the elements they have left us a second life of truth and beauty.

Even those forms, as modillions and mutules, which may be looked upon as metaphors standing ready-made in the language of classic art, we have no need literally to appropriate to our purpose, for they admit of some variation in form and proportion; and though the thoughts of others, they may, if we feel their truth, come forth from our hands as new coined. A master hand, moreover, can give a freshness to old forms by its mode of treatment and application, and find scope for refinement of thought and for tenderness and delicacy of feeling, and while these are exercisied who can say what germs of life and beauty, now supposed dead in ancient art, may not again unfold their charms to the day?*

S. H.

* Mr. Ruskin tells us that all capitals might be divided into concave and convex, and thus ranged into *two* orders. It is true that their constituent curves could be so divided; but if from the collected capitals of the world we were to separate the convex, would not other than concave ones remain—a kind more beautiful than either, viz. the ogee? This figure many of the Egyptian capitals are in actual or general contour.—S. H.

COMPETITION FOR BRIGHTON WORK-HOUSE AND INDUSTRIAL SCHOOLS.

As an instance of the manner in which competitions are managed on the part of the judges, we beg to enclose you the correspondence which has passed between the Clerk of the Brighton Board of Guardians and ourselves.

The instructions to competitors strictly limited the sum to be expended on the workhouse to 14,000*l.* and that on the schools to 5,000*l.* The lowest tenders, even after the alterations authorised by the board, amount respectively to 25,000*l.* for the workhouse, and 13,287*l.* for the schools.

Up to this date (May 15th), we have not heard from Mr. Somers Clarke, and as Mr. Becher's last letter was dated 1st May, we have no course left but to make the matter known. If all such transactions were exposed, it might tend to put a stop to the system, but we leave comment to your readers. LAWFORD AND HENEKER.

The correspondence is to the following effect:—On March 7th, Mr. Becher, the clerk to the guardians, informed Messrs. L. & H. that the amount of second premium, 20*l.* awarded to them, had been paid into Messrs. Jones Lloyd and Co.'s bank.

To this the architects replied, that "Before accepting it, we feel it our duty to acquaint you that information has reached us from a quarter on which we cannot but place considerable reliance, that in the awarding of your first premiums for both workhouse and schools, you have selected designs which were not in accordance with your printed instructions, inasmuch as they exceeded in cost the amounts specified as the limits to which you could go, and that so palpably, that even before issuing advertisements for tenders for the works, and thereby testing the accuracy of the architect's estimates, you have authorised the alteration of these selected designs, thereby giving a preference over the designs of those who had complied with your instructions. You will naturally see, gentlemen, that if this statement be true, it strikes at once at the root of that honourable principle which ought to be the mainspring of action in these transactions. It is upon the faith of the honour of the judges that architects are induced to compete, and the departure from one of the main principles of the 'instructions,' that principle which brings into play the skill of the architect to provide the greatest amount of accommodation at the smallest cost, is so serious an evil, that if generally known and acted upon, it will destroy all competition and prevent any honourable man from devoting his time and talents, when he may be assured that time and talent will alike be thrown away;" and they said they waited to hear that there was no foundation for such a report.

Mr. Becher answered, that the board of guardians had "selected what in their opinion were considered the best designs for the contemplated workhouse and industrial schools, and awarded the premiums accordingly."

The architects, of course, said this was no reply, and again (17th March) asked for an answer to their question. Obtaining no answer, on the 5th April they wrote again, and then on the 20th. On the 21st Mr. Becher acknowledged these letters, and

* To be continued.

said, "The only reply I can give to them is to refer you to my first communication."

On the 29th Messrs. L. and H. wrote, "We are under the necessity of declining to accept the second premium, awarded to us for our design for the Industrial Schools, as we feel that the acceptance of a premium, under such conditions, would be to sanction a course of proceeding contrary alike to honour and integrity, and detrimental to the true interests of the profession to which we have the honour to belong;" and in conclusion they stated their intention to publish the correspondence.

On the 1st May Mr. Becher wrote to say, that the letters had been referred to Mr. Somers Clarke, solicitor to the board of guardians, who would explain the matters referred to, as soon as he was relieved from a domestic sorrow: and here the matter rests.

We have not the instructions and stipulations before us, but it seems a flagrant case of injustice, calling for a strict inquiry.

TUCKER AND REEVES'S CLOSED KEY-HOLE LOCK.

WE have been trying a course of house-breaking; that is, not exactly house-breaking, but lock-picking, the first step towards it, and have completely astonished ourselves with the results. As Hamlet says, it is "as easy as lying," for a man with a tender conscience we should say, easier. No matter whose the lock, with the instruction of a rival inventor you may, to use the words of the same philosophical mad prince, their

> "Quietus make
> With a bare *bodkin*."

Out of this "splitting" upon one another, on the part of lock-makers, it is to be hoped that a thoroughly secure fastening will ultimately come: simply destroying confidence in what we have, without furnishing an efficient substitute, is not the proper office of a friend or a picklock. Now, whether or not the lock named at the head of these remarks, invented by Mr. Tucker, is thoroughly secure against all insidious Hobbses we will not pretend to say, but certainly it does seem to us that one of the reasons why ordinary "combination locks" can be picked does not exist in this case, because the key-hole (by a peculiar arrangement) is completely closed or covered over during the whole time the bolt is being drawn back, and while the wards and the opposing piece are in contact with or passing each other. The action of the wards or slides is from front to back, as in a Bramah lock, but, unlike locks of that description, the slides, instead of being centrically in the revolving slide-box or drum, are contained in an eccentric chamber in it; the only access to them being through a grated or gridiron key-hole, which is attached to and revolves with the drum. In some other locks, again, the opposing plate is so formed that the slides are always in contact with it; but in the present lock, that plate is so constructed and disposed that the slides cannot be brought into contact with it, until the drum which contains them is turned so far round as to carry the grated key-hole completely behind the front plate of the lock, when communication with the combination slides is a mechanical impossibility.

When we take to locking up (what a sad thing it is that it should be necessary), we shall certainly try Mr. Tucker.

VACANT LAND NEAR ST. PAUL'S.

A DEPUTATION from the committee appointed at the Institute of British Architects, attended the Improvement Committee of the Corporation on Monday, by appointment on this very important subject, when Mr. T. H. Hall (the Chairman of the Improvement Committee) said the question was an entirely open one, and that the City had not taken any steps either to let or build upon the land.

Mr. Tite, on the part of the deputation, explained the part the architects had taken. He said they had had considerable public agitation of the question, and deemed it their first duty to submit the matter to the Improvement Committee; that Sir Christopher Wren's idea of having the cathedral surrounded by a large open area had been defeated; but that circumstances had now occurred which rendered that possible which was formerly believed to be impossible; that the leaving this space open would give air and increased accommodation, so much required in a public point of view; and that it would furnish the most splendid view of one of the finest works of architecture in the world. He urged the adoption of this suggestion as a most graceful conclusion to important and well-executed public duties, in which the committee, it appeared, were likely soon to be superseded.

Mr. Hardwick read a letter from Lord John Russell, expressing his lordship's entire concurrence in the objects of the deputation. He advocated the improvement, and showed that Dance and Mylne had in vain laboured in the same cause, that the south-east view of the cathedral was the most important, because of the exquisite light and shadow, and the present opportunity, if once lost, could never be regained.

Mr. Sidney Smirke spoke of the artistic value of the opening, and Mr. Masterman, Sir James Duke, Professor Donaldson, Mr. Penrose, and others followed.

The Chairman stated that the Improvement Committee were most anxious to listen to all the arguments that had been urged, but that, as trustees, they must proceed cautiously; that they had already sanctioned a branch street to Blackfriars, and the plan for raising Holborn-hill; and, with these great schemes before them, the loss of 60,000*l.* was an important item; that twopenny and threepenny rates for improvements were talked of, but that 60,000*l.* would require the whole of a shilling rate on a very large district to replace; that the committee felt the artistic question very strongly, and that they had resolved to have all the hoards removed, in order to give the committee and the public the best opportunity of judging of the probable effect of giving up the whole or a part only of the area in question.

Intimation has since been received "that New Cannon-street will be opened into St. Paul's Churchyard on Monday next, at one o'clock precisely, when the hoarding round the vacant ground between the new street and the Churchyard will be removed."

HEALTHY SCHOOL BUILDINGS AND EFFICIENT FITTINGS.

THE Educational Exhibition of the Society of Arts, which is intended to be opened at the end of next month, at St. Martin's Hall, deserves every attention. Conceived in a liberal and no sectarian spirit, it has already received encouragement and assurances of support from all classes—as a list of the numerous committee for promoting the Exhibition amply testifies. It is proposed to bring together all the various appliances used for imparting instruction and facilitating the acquisition of the different branches of learning, in elementary and technical or trade schools. Thus there will be books of all kinds; maps and atlases; prints and diagrams; apparatus for the teaching of the practical sciences; collections of objects for imparting a knowledge of natural history in its many departments; appliances for facilitating the teaching of choral singing and instrumental music; drawing materials, mathematical instruments, and specimens of apparatus of even the simplest and most humble kind, down even to pens, slate-pencils and inkstands, as these, it is believed, form a large item in the expenditure of the poorer class of schools, and may yet be as much capable of improvement as any other articles employed therein.

Our chief reason, however, for alluding to this exhibition is, that not only is it desired to represent the actual means of instruction, but it is also wished to obtain information relative to school buildings, their fittings, and furniture. Thus plans, models, drawings, photographs, and descriptions of complete sets or portions of buildings, with their appurtenances, for educational purposes, however designated, are asked for, and particularly the modes of lighting, warming, ventilating, and draining such buildings. Among what are considered desiderata, are the following:—Moveable partitions, materials for and means of suspending curtains, means of suspending diagrams, lining for walls, flooring for play-grounds, means for preventing echo, improved and inexpensive stoves, &c. The Committee of Council on Education in their "Memorandum respecting the organisation of schools in paralleled groups of benches and desks," state that the best form for a school-room is an oblong, with groups of desks arranged along one of the walls, so as to form separate classes; each group being divided from the adjacent group or groups by an alley, in which a light curtain can be drawn forward or back; and no group containing more than three rows of benches and desks. The best width for a school-room, intended to accommodate any number of children between 48 and 144, is considered to be from 16 feet to 18 feet. This allows sufficient depth for the three rows of desks and benches along *one* wall, and space for the teachers to stand before the class. When a greater number of children has to be accommodated, the L shape is recommended in preference to increasing the width so as to get groups of desks and benches along *each* wall. The Committee of Council do not recommend that the benches and desks should be immovably fixed to the floor in any schools; but think they should be so constructed as to be easily removed, though not readily shaken or pushed out of place. The desks should be either quite flat or *very slightly* inclined, without any raised ledge in front. A large gallery for the simultaneous instruction of two or more classes should also be provided, if possible in a separate room.

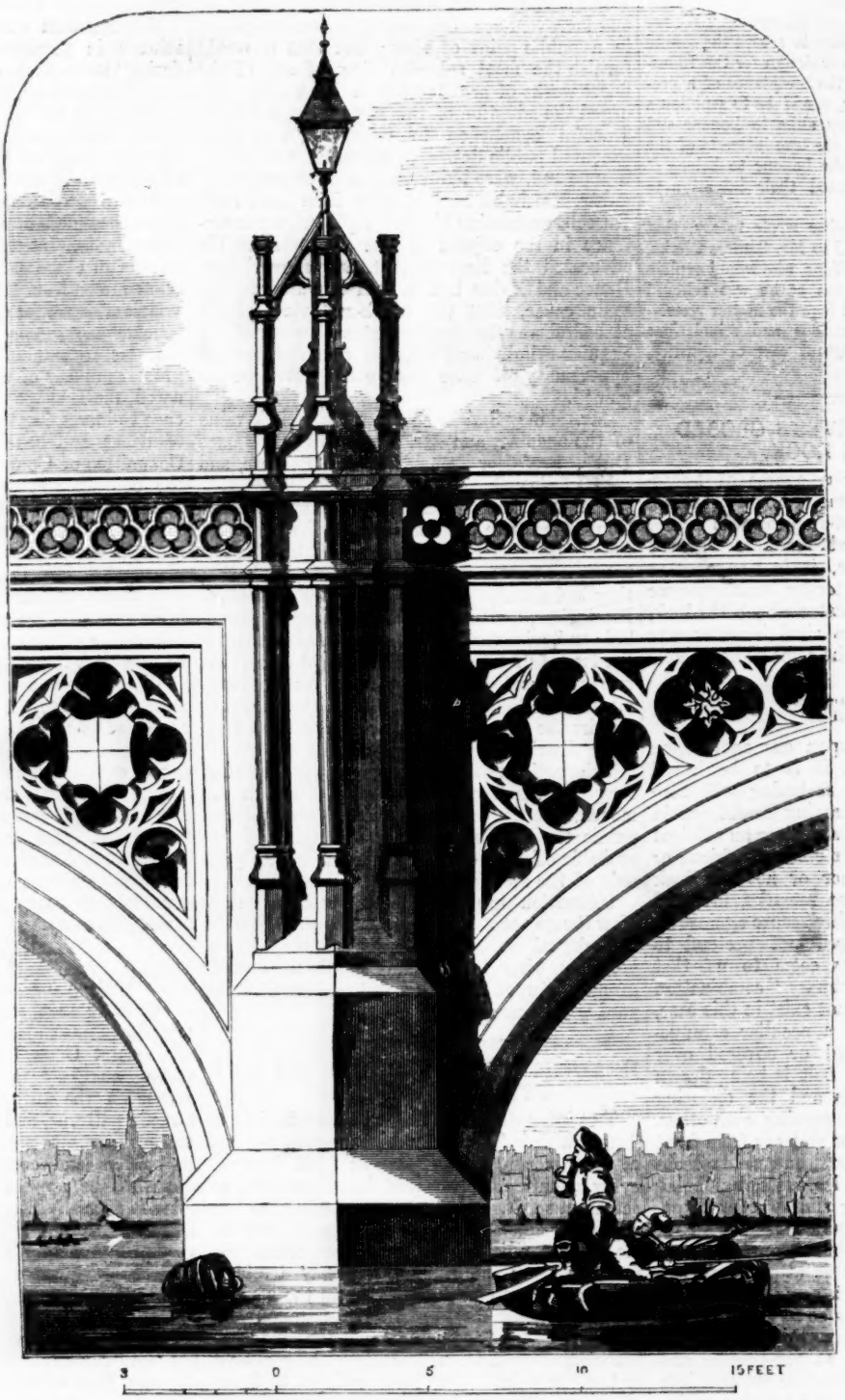
We understand that the counsel and assistance of the Royal Institute of British Architects and of the Institution of Civil Engineers have been sought in this department of the proposed exhibition, and it is not too much to expect that from the individuals composing those bodies, if not from the corporate bodies themselves, that most important matter, a healthy school, with all the necessary appliances for promoting the physical comfort and development of our youth, may be obtained with the utmost economy.

BOWDEN'S ORNAMENTAL GLASS.

WE have seen some specimens of what the manufacturer calls "Bowden's Brilliant cut ornamental Glass," which promises to be a useful auxiliary in house decoration. The colour on the surface of the glass is ground away in patterns, and the effect is very sparkling and brilliant. At present it seems to be confined to borders and corners, but the process can doubtless be applied to whole squares. The glass is specially intended for staircase-windows, hall-doors, &c., and has, as we before said, a very pretty effect. The works are in Bristol.

"BERLIN" IN LEICESTER-SQUARE.

MR. BURFORD'S View of Berlin, a city which has more modern architectural works, and fewer old ones, than most places of similar extent, is taken from the top of the cathedral, and shows in the foreground around,—the Royal Palace, with the *Unter den Linden*, terminated by the Brandenburg Gate, the Lust Garten, the Arsenal, and the Museum, in the new town, and the Gymnasium, the *Hôtel de Saxe*, the Military Academy, &c. in the old town, with the river Spree, sullen and thick, which separates the two. The Museum (by Schinkel), with its long Ionic colonnade and fresco decorations beneath, is effectively painted, but the columns look out of upright: the perspective of the Arsenal, too, is unpleasant; and the spire of St. Nicholas's Church, seen from one part of the gallery, is tumbling down. It is, nevertheless, a charming picture, and should be visited by all our readers. The Spree is painted,—as if the artist delighted in such things,—*con amore*: and the Royal Palace, an immense building, the shadow of the cathedral on the Lust Garten, and the old Exchange, close by Frederick's Bridge, are other points which will attract the eye of the observant visitor. The new museum, designed by August Stüler, does not come into the picture. It is close to the old museum, and connected with it by a covered bridge over a street. The prevalence of the Ionic order in Berlin is a peculiarity; the new Theatre, the Opera House, the Museum, and a host of smaller buildings display it.



THE PROPOSED WESTMINSTER-BRIDGE: PIER OF CENTRE ARCH.

THE PROPOSED WESTMINSTER BRIDGE.

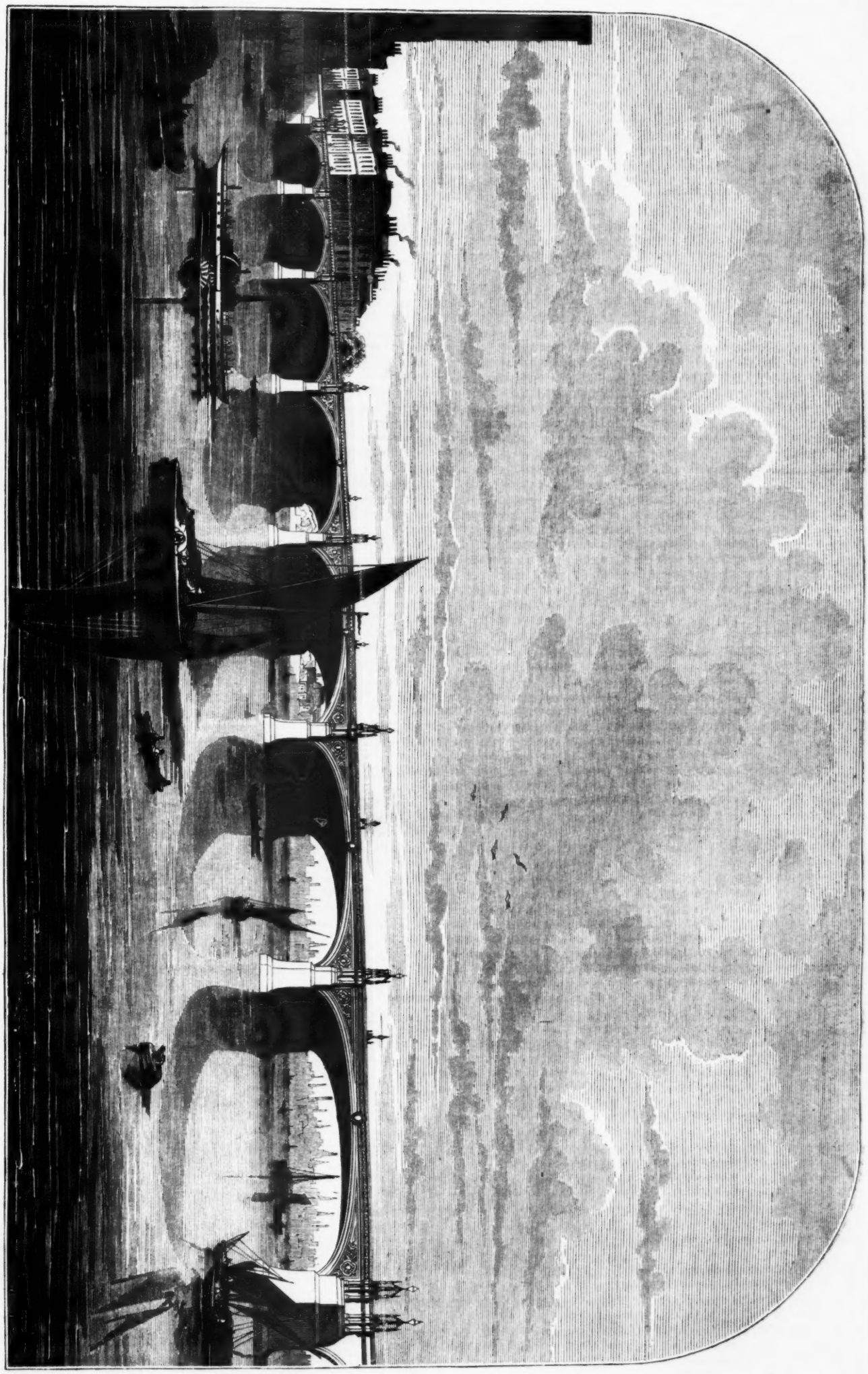
WE are glad to be able to satisfy public curiosity by publishing a view of the proposed iron bridge at Westminster, about to be constructed under the direction of Mr. Thomas Page, engineer. We give also a representation of one of the piers of the centre arch, on a larger scale, so that the details may be more clearly seen. The general view shows the bridge at low-water; the enlarged view at high-water. The bridge is Gothic in design, to accord with the Houses of Parliament, and consists of seven openings. The first arch on each side is 95 feet in span, with a rise of 16 feet from Trinity datum; the second, 105 feet, with rise of 17 feet 6 inches; the third, 115 feet 3 inches, with rise of 19 feet; and the fourth, or centre arch, is 121 feet in span, with a rise of 20 feet. The low-water line is 18 feet below Trinity datum. On the Surrey side there are also two small land-arches. Including these, the whole length of the bridge may be called 914 feet. The width of the bridge will be 85 feet, including the parapet on each side.

In the construction of the foundations the engineer proposes to avoid the use of caissons. Screw piles will be driven at intervals of 5 feet from centre to centre, to form the outer line of each pier; iron sheathing will be introduced between these to make an inclosure, and the loose ground is then to be dredged out from within it. Timber piles are then to be driven in over the area so enclosed at intervals of 3 feet one way and 4 feet the other from centre to centre, and concrete will be filled in between them. On the top will be placed two layers of 6-inch landings and granite slabs, and on these will be built the pier, rising 2 feet above Trinity datum, to receive the iron superstructure. The headway in centre opening, 20 feet, will be about 5 feet less than in centre opening of the present bridge, and the roadway, nearly level, will be 10 feet lower. The new bridge will occupy some of the site of the old bridge, and as it is proposed to use the latter during the construction of the new bridge, part of the width of the latter will be put up first, and this will be made fit for temporary use before the old construction is taken away and the remainder of the new work put up.

Our readers will remember that the tenders varied from 305,000*l.* to 201,000*l.* for which sum the bridge is to be built by Messrs. Mare. The contract for the supply of all the granite required has been taken by the Cheesewring Company.

We content ourselves with describing the structure, and placing correct information before our readers. It is necessary, however, we should say, much surprise is expressed that arches of larger span have not been adopted.

FINCH-LANE, CITY.—A correspondent insists that "the presence of the district surveyor is immediately needed in the neighbourhood of Finch-lane, Cornhill, the locality being in a most dangerous state." We have no doubt it is properly looked after.



THE PROPOSED WESTMINSTER BRIDGE.—Mr. Thomas Page, Engineer.

THE CUTLER STOVE.

IN the paper read by Dr. Arnott before the Society of Arts, as reported in your pages, it was stated "that the apparatus for lifting the coal in stoves of Mr. Cutler's invention was complicated, and liable to get out of order;" but it will on the slightest examination be found to be the very contrary, being simple, strong, and powerful. It was also stated "that Mr. Cutler was not aware that others were also engaged in the same pursuit, and took out a patent," &c. But the fact was otherwise, and it was not until some time *after* the publication of my patent, when it had attracted much of the public attention, that a great variety of expedients, as appears to be the case at present, were tried to effect the same purpose, but without success, and this ultimately drove my opponents to the expedient of subscribing largely to obtain a writ of *scire facias*, in the hope of discovering some legal flaw in the specification; and in this they certainly succeeded, although with difficulty.

For the cause of truth, I trust that you will favour me with this insertion in your next publication. JOHN CUTLER.

PROVINCIAL NEWS.

Boston.—The parochial authorities are very properly cautioned by the *Lincolnshire Chronicle* against longer allowing the tower of the church here to be without a lightning conductor, especially as a considerable quantity of metal, in form of ties and bars, has, it is remarked, been introduced into the tower since the erection of the groined roof. We hope there will be no occasion in course of coming thunder-storms to reflect on the authorities for neglect of this precaution.

Stamford.—The Burial Board have received and decided upon tenders for the erection of the chapels, lodge, hearse-house, &c. according to the plans and specifications furnished by Mr. Ed. Browning, architect. The following tenders were received:—Mr. Moses Peal, 1,080*l.*; Messrs. Richardson and Son and Mr. Robert Tinkler, 953*l.*; Mr. Hy. Bradshaw, 1,039*l.*; Mr. Jeffs and Messrs. Gilbert and Son, 1,080*l.* Only one tender was received for the erection of the boundary-wall,—from Mr. Peal, at 3s. 6d. per square yard, and 8d. per yard for the coping. Mr. Peal, however, subsequently withdrew this tender.—For the chapels, &c. the tender of Messrs. Richardson and Tinkler was accepted. —Mr. C. Richardson said the works would be commenced first week in June, and completed by 1st December next. The erection of the boundary-wall was left for consideration at a future meeting. The appropriation of only one-fourth of the ground for Dissenters was objected to.

Ridgmount.—The foundation-stone of a new church at Ridgmount, Bedfordshire, was laid on 25th ult. by the Duchess of Bedford.

Woodstock (*Oxon*).—Industrial schools are in course of erection here, consisting of boys', girls', and infants' schools, and class-rooms. The buildings are of stone, axed face, and plain dressings,—the stone given by the Duke of Marlborough. The roofs to be open framed, and stained in front at the end of infants' school, and over centre entrance-porch a bell turret. The plans were furnished by Mr. Teulon; the contract was taken by Mr. H. Quarterman, of Oxford, builder.

Dudley.—We are glad to observe that strenuous measures are now being taken to bring this town to something like a healthy state. Not less than fifty tons of refuse nightly, it seems, are being removed, ere the hot weather approach; and much need there is for such measures, for we observe from a report just made to the Board of Health by its health officer, that while the average age of the inhabitants of healthy districts is forty years, and even of those of London and Bristol, thirty; the average age of the Dudley people for the last five spring quarters is only sixteen! This is really dreadful. Here is a slow insidious plague, already cutting off the inhabitants by wholesale. What are we to expect should cholera still further aggravate and intensify such a state of things as this? The want of water among the poor of the town is a crying evil which ought to be forthwith looked to: surely some ready way of remedying this vital defect may be thought of and acted on.

Gornal Wood.—On Monday in last week the ceremony of laying the corner-stone of a new chapel for the Methodist New Connection, was performed by Miss Roberts, of Cooper's Bank. The old chapel, erected only thirty years since, was sadly torn to pieces by the mines, so as to become at last dangerous to assemble therein. The new chapel is to accommodate 550, chiefly in pews, having three galleries, and a large *platform* over the communion, in a segmental-shaped apsis, flanked by two arched recesses. The architect is Mr. Wigginton, of Dudley, and the builders are Messrs. Hinton and Meredith, of Pensnett.

Gloucester.—The proposed Working Man's Institute is to be carried out on a creditable scale, and will secure great advantages to the labouring classes of this city. The site has been fixed upon, and considerable support insured. A plan of the building was lately produced before the committee, and which it is proposed to erect on a portion of the Gloucester and Berkeley Canal Company's property opposite the Infirmary, having a frontage of 32 feet in Southgate-street, and running back to the Docks, the whole forming an area of 124 by 32 feet. The building will comprise a dwelling-house complete, fronting Southgate-street, containing on the ground floor, a large kitchen and room for preparing and serving coffee, &c.; and up-stairs, a sitting-room, closet, and two bed-rooms, and other conveniences for the person in charge of the building; a coffee-room, 25 by 20 feet, fitted up complete, a reading-room, 16 by 25 feet; a library and lecture room, 60 by 30 feet, for public purposes. Access is to be had upon the payment of one penny; other charges in proportion. The house will be kept open from five in the morning till ten at night, with tea, coffee, and refreshments kept ready. One half-penny a visit will be charged to the reading room and library. Persons taking refreshments to be admitted free. Works from the library will be obtainable at one half-penny per volume, for fourteen days.

Llanishen.—The church near Trelleck, on the old road from Chepstow to Monmouth, and eight miles from the former, has been entirely rebuilt on a different site in the same churchyard, at a cost of 650*l.*, from the designs and under the superintendence of Messrs. Prichard and Seddon, the diocesan architects. It was consecrated by the Lord Bishop of Llandaff on the 9th instant, and consists of a nave 42 feet by 18 feet in the clear, with bell turret over the western end, 55 feet high from the ground, a south porch to the nave and chancel, with vestry attached on the northern side. It accommodates about 150 persons. The walls are of rubble masonry, with the whole of the external and internal quoins and other dressings of free-stone, partly Combe Down and partly native. The roofs, which are covered with Brosely tiles, are of Memel timber, having principals with curved braces springing from stone corbels. The open seating, pulpit, and desk are of Memel, stained and varnished. The church is in the early geometrical Gothic style.

Eaton Hall.—The Marquis of Westminster's well-known mansion, Eaton Hall, which has for several years been undergoing alterations and improvements, will be re-opened, for the inspection of visitors, on 5th June next. It may be seen this summer, according to the *Chester Chronicle*, in June, July, and August, on Mondays, Tuesdays, and Wednesdays, between ten and four, by separate tickets, for house or gardens, to be procured in Chester at the Royal and Albion Hotels, or of Messrs. Prichard, Roberts, and Co., booksellers, Bridge-street Row; at Pulford, from the master of the school; and at Aldford, from the landlord of the Talbot Inn. Foreigners and travellers will be admitted also on Thursdays in the same months. Parties who desire to visit the gardens *only*, will be admitted with their tickets by the lodge at Eccleston village.

Birmingham.—The contractors for the restoration of the tower of the old church of St. Martin, Messrs. Branson and Gwyther, lately began to remove the brickwork casing of the tower. The casing of brick, added about 1692, is still mostly in good condition, but the rents here and there visible showed that the precautionary steps now taken ought to have been adopted many years ago. The sandstone was quite friable, and crumbled between the fingers. The four dials have been taken down. They are thick iron plates, eight feet in diameter, exclusive of the minute circle, which is also of iron, and very massive. In the face of the tower fronting the Nelson Monument, are traces of a square dial. A good deal even yet remains to be done in the subscription line, according to the local *Journal*.

Bilston.—The foundation stone of the chapels of the proposed new cemetery for the township of Bilston, was laid publicly on Tuesday in last week. The site is about a quarter of a mile on the road to Wolverhampton. It comprises about nine acres to be enclosed by a boundary wall 8 feet high. The ground will be about equally divided for members of the Church of England and Dissenters. The chapels will be connected by a passage-way common to both, that in connection with the Church of England being on the east and west, while the Dissenters' will be on the north and south. The interiors will be of equal extent, and fitted up similarly. The building will be in the Early English style, details simple—tresses dividing the sides into four bays, the interior being lit by coupled trefoil-headed windows. The tower dividing the two chapels will rise to a height of 70 feet. The architects are Messrs. Bidlake and Lovatt, of Wolverhampton. The contractors, Messrs. Burkitt and Nelson, likewise of Wolverhampton, have engaged to have the chapels, and other buildings finished by 5th October.

Helpringham.—On Friday in last week, the church here was struck by lightning. One of the pinnacles fell, almost entirely demolishing the roof. Several of the stones—some weighing upwards of 1 cwt.—were projected across the road to a distance of 100 feet. At about the same time a fire-ball struck the church in another place, on the south-east, and passed through and out of the building without doing any damage. The visible damage is estimated at about 400*l.* but the whole spire is much injured; it is considerably out of the perpendicular, and will probably, it is thought, have to be taken down.

Nottingham.—The interior of the Theatre Royal here is to be remodelled on plans prepared by Mr. R. Clarke, architect.

Stockport.—The contractors for making the main sewer from the Union Workhouse along Oliver-street, the lower part of Greek-street, and Wellington-road to Spring-bank, have been unable to complete the work for the sum fixed, 478*l.* The cutting is a deep one throughout. As the workmen neared the Infirmary they had to encounter springs and loose clay, which so undermined and baffled their operations, as to incur great expense to prevent them being buried alive. The sums specified by the various parties who tendered for this deep and extensive piece of main sewering varied from 1,100*l.* to 478*l.*

Doncaster.—Tenders were opened on Saturday week for the erection of Cadeby Church, the first stone of which was laid lately by the founder, Sir Joseph Copley. Considerable difference, we hear, existed in the estimates. The choice fell upon Mr. Lee, builder, East Retford. The work is to be proceeded with immediately. The stone is to be taken from the quarries at Sprotbrough.

Bramham.—The old church here, which has for some time been undergoing repairs and enlargement, is likely to be reopened at Whitsuntide. The works are progressing fast. The architects are Messrs. Perkin and Backhouse, of Leeds, and the contractors Mr. John Holmes, builder, Bramham, and Mr. Wilks, glazier, Bramham.

Carlisle.—The sewerage of this City, under the estimates recently accepted by the corporation, will cost somewhere about 23,000*l.* A recommendation brought before the corporation from the Health Committee for the appointment of a resident surveyor, has led to a discussion which shows a considerable difference of opinion on the subject. On the one hand, the recommendation was advocated as economical; on the other, it was condemned as involving un-

necessary outlay, by creating a new office, with duties which had already been undertaken by the present corporation surveyor. Mr. Rawlinson seemed to have at first contemplated that Mr. Hogg, the corporation surveyor, would act under his directions. The state of that gentleman's health, however, appears to have induced him to recommend the special, and we presume temporary, appointment of Mr. M'Kie, at a salary of 250*l.* a year, to superintend the sewerage works; and the local *Journal*, which thinks this a very proper appointment, states that Mr. Hogg's time is already fully engaged with other public works, even independently of the question of the state of his health.

Glasgow.—A new crane is about to be erected in this city to lift 70 tons, and which will cost 8,000*l.*

PROCEEDINGS UNDER THE METROPOLITAN BUILDINGS' ACT.

PARTY WALLS.

J. DREW *at suit of* BAKER, D.S.—In making certain alterations, consisting principally of new shop-fronts to two houses, Nos. 8 and 9, Hampstead-road, both in the same occupation, the builder proceeded to cut away a portion of the party-wall between the fronts, to substitute one substantial timber story-post (in lieu of the wall and story-post on each side), to carry the ends of two brestsummers, the timber of which communicated, and to erect the new shop fronts, the woodwork of which ran through from one house continuously to the other, without any incombustible separation, as required by Schedule E. These proceedings were objected to at the earliest stage by the District Surveyor, and not being amended, they became in due course the subject of inquiry before the official referees. Mr. Baker contended that, notwithstanding the occupation of both houses by one person, the wall between them, having been originally "built in order to be used as a separation of two buildings," still continued and was a "party-wall" according to the definition in Section 2, and that consequently such wall could not be removed, nor could the brestsummers or the woodwork of the shop-fronts be carried through and over the centre line of such party-wall.

On the part of the builder, it was stated that the two buildings now in fact formed but one house, and that the uniting of wooden shop-fronts under such circumstances was not an uncommon occurrence in some districts; at the same time, it was admitted that the other party-walls and the external walls were not of the thickness required for the increased rate of building, on the supposition that the whole formed one house.

The case was heard before the three official referees, who were unanimously of opinion that the integrity of the party-wall must be preserved; and an award has since been issued to that effect, and adding that the cutting away of a portion of the said wall next the street is not an opening within the meaning of the Act; that the ends of the brestsummers and the timber story-post are also contrary to the Act, and likewise the wooden entablature and wooden centre pilaster, both being within 4½ inches of the centre line of such party-wall.

The costs, 2*l.* 5s. 2d. and 1*l.* 1s. to the district surveyor, to be paid by the builder. In justice to the latter, it is but fair to add that (according to our informant), he has simply acted agreeably to the instructions of the surveyor employed to carry out the works.

SLIDING CAISSONS.

AT the Institution of Civil Engineers, on the 9th inst. the paper read was "A Description of the Sliding Caisson at her Majesty's Dockyard, Keyham, Devon," by Mr. W. Fairbairn.

The substitution of caissons for the ordinary lock-gates, and their employment for closing the wide entrances of docks, was first suggested, in this country, by General Sir Samuel Bentham; since his time they appear to have been somewhat extensively used, although the objections of occupying a considerable time, in having the water pumped out of them, and it being necessary to float them entirely away from the opening before a vessel could pass, rendered them applicable only for special localities. The great width of opening required for the passage of ships of war induced a rather general use of such caissons in the royal dockyards; and at the new dockyard at Keyham, where it was considered desirable to have the best accommodation for the newest class of large ships, the great breadth of the mouth and the depth of the basin induced the trial of a new form and arrangement of caisson, which should be of such capacity and dimensions as to resist the pressure of the water, effectually close the entrance, and still be so easy of manipulation as to admit vessels of war passing into the dock at any state of the tide.

The Keyham Docks were described as extending along the eastern shore of the Hamoaze, immediately below Morris Town; their construction was commenced in 1844, and they consist principally of two capacious basins, with several entrances, or locks, from the sea; one of these it was thought desirable to construct in such a manner as to have the power of using it, when necessary, for a dry dock; its dimensions were 260 feet long, 80 feet wide, and 43 feet deep; the inner end, next the dock, was closed by a caisson of the ordinary form, and at the outer end, next the channel, the new caisson was tried. It was designed by Mr. W. Scamp (of the Admiralty), and was constructed by Mr. Fairbairn.

The form of the caisson was that of a rectangular vessel, 82 feet 6 inches long at the top, 68 feet 6 inches long at the bottom, 42 feet high, and 13 feet 6 inches wide; it was built of wrought-iron plates, varying in thickness from ⅜ths inch at the bottom, to ⅝ths inch at the top, well supported throughout by an inside framework of angle-iron, and gusset-pieces, and by two decks of iron and one of timber for the interior arrangements, but which at the same time imparted great strength to the structure.

The plates were connected by "butt-joints," with covering plates, attached by double and quadruple rows of rivets, and the bottom and ends were clothed with oak timber which bedded upon the cill, and against the jambs, when the caisson was in its place. The internal arrangements of the caisson were such, that when it was required to withdraw it from across the opening of the lock, by merely opening a valve, a sufficient quantity of water escaped from the upper chambers, to allow the body to rise a few inches from the bottom cill, when, instead of, as in the ordinary system, turning it round and floating it away, it was drawn back, by chains, transversely into a channel, or opening in the masonry, at right angles with the lock, leaving an opening of the clear span, and after the passage of the ship, it was drawn across again, and by opening another valve, as much water entered as settled it securely on its bed, or cill. This operation was stated to have occupied only eighteen minutes for the passage of a line-of-battle ship; ten minutes for opening and eight minutes for closing. The total weight of the caisson was shown to be 290 tons: it contained 33 tons of iron ballast, and had an internal capacity for 323 tons of water.

"JERVAIS, THE ARCHITECT."

YOUR correspondent, "S." (p. 254), writes:—"Malone, in his 'Account of the Life of Sir Joshua Reynolds,' gives a letter from that artist respecting the west window of the Chapel of New College, at Oxford, in which Mr. Jervais is mentioned as the architect employed by the college," adding, "What is known of Jervais (I am afraid no good), and what are his principal works?"

Has not "S." discovered what is vulgarly termed a mare's nest? In the "Account of the Life and Writings of Sir Joshua Reynolds," by Malone, prefixed to "The Works of Sir Joshua Reynolds," in 3 vols. 8vo. 1798, at p. lix. vol. 1, an extract from the letter of Sir Joshua to a Fellow of New College, referred to by "S." is given as follows:—"Leicester Fields, Dec. 27, 1777.—I am extremely glad to hear the society have determined to place all our works together in the west window, to make one complete whole, instead of being distributed in different parts of the chapel. In my conversation with Mr. Jervais about it, he thought it might be possible to change the stonework of the window, so as to make a principal predominant space in the centre, without which it will be difficult to produce a great effect. As Mr. Jervais is now at Oxford, I need add no more. I have already expressed to him how much I wished this alteration might be practicable."

The "New Oxford Guide, by a Gentleman of Oxford, 12mo. seventh edition, corrected and enlarged, 1785," after describing at length the subjects in painted glass in the west window of the ante-chapel at New College, adds, p. 49:—"This piece was begun about seven years ago. Finished cartoons were furnished by Sir Joshua Reynolds, and executed in glass by Mr. Jervais."

The "New Pocket Companion for Oxford," 12mo. 1795, after a similar description of the windows, continues (p. 51), "For this work, which was begun about the year 1776, finished cartoons were furnished by Sir Joshua Reynolds. These were copied by Mr. Jervais, to whose skill the world is indebted for a new style in glass-painting, which in beauty and truth of representation exceeds all that have hitherto been seen as much as the common productions excel the first rude attempts at the art."

This statement has been repeated in subsequent editions of the "Companion," &c. The work is likewise referred to by Dallaway, in "Anecdotes of the Arts in England," 8vo. London, 1800 (pp. 449-451), with high commendation, but the name is printed Jarvis.

As in the letter referred to by "S." and from which an extract is given above, it is not stated that Jervais was the architect employed by the College, and as the name does not appear in any list of architects commonly met with, is it not most probable that Jervais, dubbed by "S." "the architect employed by the College," and of whom he fears "no good is to be heard," will prove to be Jervais, the eminent painter on glass, whose good works are so generally known and appreciated, and whose decease is recorded in the *Gentleman's Magazine* for September, 1799, in the following words?—

"August 29.—At his house, in Windsor, where he had retired from his profession for some years, Mr. Thomas Jervais, an eminent artist. How highly he adorned the art he professed, his works in New College Chapel, Oxford, and St. George's, Windsor, will best prove." G. B.

LUNATIC ASYLUM FOR WESTMORELAND AND CUMBERLAND.

A COMMITTEE of Justices of Peace for Westmoreland and Cumberland was recently appointed under 8 and 9 Vict. cap. 126, for providing an asylum for lunatics within these counties. Col. McLean was chairman of the committee, and, according to a leader in the *Carlisle Journal*, on him will rest the chief responsibility of their acts. The Lunacy Committee offered a premium of 200*l.* for a plan suitable for their purpose. Thirty or forty competitors sent in their drawings. The committee, as appears from the *Kendal Mercury*, did not call in any competent person to guide them in their choice, but from these plans picked out the three cheapest,—without any regard to the essentials of a good institution,—and from the three cheap plans selected the cheapest, the winner of the premium being Mr. Thomas Worthington, of Manchester, "whose connection as brother with the engineer of the railway company of which Col. McLean is a director, may or may not justify the suspicion that personal influence regulated the choice." An extravagant price, it is added, has been paid for a site most inconveniently situated in a bleak and clayey as well as out-of-the-way district, where, moreover, no water can be got, although 160*l.* have been vainly expended in boring, which has been abandoned, and arrangements made for sending a mile of main piping from the Carlisle Waterworks, to which 50*l.* a year are to be paid for water which ought to have been got upon the spot selected for such a purpose. Several county magistrates, and many others, have signed a memorial to the Home Secretary setting forth these grievances. A correspondent of our own complains, as others have done, of the treatment he received as a competitor in this business, his drawings having been sent back within a week of being sent in, and without the slightest information or acknowledgment in explanation of the why or wherefore.

TO DESTROY VERMIN IN HOUSES.

THE right mode of destroying all vermin harbouring in the wainscots or furniture has not been yet given, so as the warm season approaches, when these ephemerides swarm and multiply, the following simple remedy is suggested to prevent a late querist from being flea'd alive, viz.—

Take up your carpets, down your curtains. In a pailful of water (cold), mix well 1 lb. of chloride of lime (having first diluted it into a thin paste in a bowl of water, for facility of mixture), with a mop wet and saturate well the floor, skirtings, and any other woodwork that will not suffer injury, then shut the doors and windows close.

If there should be a suspicion of other tenants in the bedstead, take that down too.

In three or four hours all will have disappeared or perished; but to assure perfect immunity from the plague, it might be well to repeat the lustration a second time, *i.e.* the day or two after.

A house infested with b.'s was completely expurgated on the second process as above, at the cost of only 8d. together with the loss of a mop, burnt by the fluid. The solace gained can be easier imagined than described by FRAIL CUTICLE.

Notices of Books.

Drawing for Schools, containing Expositions of the Method of Teaching Drawing; Explanation of the Practice of Model Drawing, &c. By THOS. TATE. London: Longman, Brown, and Co. 1854.

MR. TATE is not contented with simplifying mathematics, but must lend his aid to make drawing in schools more general; and all who attempt this sensibly have our best wishes. He has here given an explanation of the practice of model drawing after the method of Dupuis; the principles and practice of outline and perspective drawing, together with a number of illustrations and drawing exercises. It is a useful work.

The Drawing-book for little Boys and Girls. By the same Author. Longman and Co.

THIS consists of the drawing exercises given in the last-named work, about 130 geometrical forms and familiar objects, on stiff paper, to be used as loose copies.

The Philosophy of Beards. A Lecture Physiological, Artistic, and Historical. By T. S. GOWING. Ipswich: Haddock. London: Lemare, Paternoster-row.

As we noticed Mr. Gowing's lecture at some length when it was first delivered, we have now merely to say that it is published with some very curious additions and quaint illustrations, including Jupiter, as we know the noble god, Jupiter shaved, and Jupiter collared. Mr. Gowing has ransacked ancient and modern history for facts; has brought learning and acuteness to bear upon the subject; and has produced an essay which will amuse and interest the most determined shaver, as much as those who feel disposed to avail themselves of the protection which nature desires to give them. We can conscientiously recommend it as a literary production, irrespective of its object.

It was on sanitary grounds alone that we set the movement afoot, for the retention of the beard and moustache, and we observe with satisfaction the result amongst those classes to whom the advice was specially directed; as to others we will, with Mr. Gowing, freely allow any one to continue the practice of shaving, who will be content with the same plea as a certain Duke de Brissac, who was often overheard uttering the following soliloquy while adjusting his razor to the proper angle:—"Timoleon de Cosse, God hath made thee a gentleman, and the king hath made thee a duke; it is right and fit, however, that thou shouldst have something to do, therefore thou shalt shave thyself!"

Miscellanea.

THE LOUTH CEMETERY COMPETITION.—We must point attention to another of those oft-recurring iniquities, which committees, boards, and such like associations of men of honour and honesty, do not hesitate to perpetrate as a body, though, as individuals, we do believe that each separate member would indignantly spurn all attempts of private or party influence to induce him so to act as he does not hesitate to do in board or committee. The Louth Burial Board appear to have selected two sets of plans for chapels, and vestries, lodge, &c. for the new cemetery to be formed at Louth, between which to decide in accordance with the relative cost, as shown by the estimates given in. The decision was accordingly come to, and published as one based on the fact that one of these two sets of plans, while the more "elegant" of the two, and otherwise "first-rate," would cost 60*l.* less than the other, which was more simple in its pretensions. So soon, however, as the estimates were published, it appeared that the selected designs were actually estimated by the architects who lodged them to cost a sum which exceeded that of the competitive designs by no less than 110*l.* on 1,080*l.* constituting, together with the 60*l.* said to have been exceeded in the rejected designs, an actual difference of 170*l.* in favour of, instead of against, the latter. The authors of the rejected plans, Messrs. Maughan and Fowler, of Louth, urgently protest against so reckless a mode of damaging them in their business by false representations; and it is not easy to see what vestige of excuse the Burial Board can show for such conduct, granting, of course, the truth of the statement, which we extract from communications in the local papers.

A "MISTAKE" IN THE "TALE" OF BRICKS.—In the Birmingham County Court last week, a case, reported in the local *Journal*, was tried, in which the sum of 9*l.* 9s. for 7,025 bricks, alleged to be short delivered, was sought to be recovered by the plaintiff, who had paid defendant for 40,000, at 26s. a thousand, and 36,000, at 27s. but had found rubble, broken bricks, and void spaces in the place of 7,025 bricks a-wanting. The judge gave the plaintiff a verdict for the whole amount claimed, with costs.

AMERICAN PATENTS.—The following are extracted from a list, in the *Journal of the Franklin Institute of Pennsylvania*, of patents issued in February, 1854:—For an improved Machine for Cutting Laths: Chas. F. Packard, Greenwich, Conn. Claim.—Cutting laths from a log or block by means of the knife or cutter, having a vertical reciprocating motion, and the knives or cutters having a horizontal reciprocating motion, the cutters being arranged and operating substantially as described. For an improvement in applying Colours to Stone: Hiram Tucker, Cambridgeport, assignor to himself and Joseph Storey, Boston, Massachusetts; patented in England, September 24, 1852. Claim.—My invention having special reference to the application of colours to a surface by means of a liquid or water bath, what I claim in the process of marbling, whereby an oil colour (or pigment mixed with a drying oil), when applied to, or spread on the surface of a bath of water, or other suitable liquid, shall have imparted to it the property above mentioned,—is an improvement consisting in employing in such process the gum kauri (or a like substance), combined, as specified, with the drying oil, the same enabling a person, by means of a bath, to apply to a surface of stone, or other material, oil colours, so as to present the natural effects or appearance of any polished stone it may be desired to imitate. For an improvement in Derricks; John B. Holmes, Boston, Massachusetts. Claim.—1st. The combined arrangement of the collar upon the mast, the revolving platform supported upon it, and clamped below it, and the tension rods from said platform to the revolving mast-head cap, in the manner and for the purposes described. 2nd. Pivoting the heel of the derrick boom upon the revolving platform in the locality, substantially such as described; that is, upon that portion of the platform which is beyond the centre of the platform when measuring from the point of suspension of the weight. For an Improvement in Corrugating Metal Plates; Richard Montgomery, City of New York. Claim.—The method described, of forming corrugated metal beams by passing a plate of metal of the proper size through a series of grooves between rolls, and through a series of crimping dies, substantially as set forth.

PLEA FOR ARCHITECTS' ASSISTANTS.—I trust the plea for a weekly half-holiday for all classes will not be lost sight of, and that the request your previous correspondents have preferred may be speedily complied with. Architects' assistants must, if they are of any worth, be men of thought and mental activity: hence any means afforded them of cultivating their intellects by an enlarged acquaintance with the works of nature or the great masters of art, must redound to the benefit of the employer as well as to that of the employed. Our museums, the national library, the galleries of art, and the public gardens here and at Kew, are accessible only to those favoured by having daylight at their command; and should the assistant have conscientious objections to spend the day of rest in country excursions, he is shut out from all opportunity of visiting the architectural relics of past ages, or of holding communion with nature, other than he can obtain by a hurried run through the city or parks after the sun has set, and when his mind is wearied with the toils of a long day. I hope, therefore, as a means of begetting additional kindly sympathies between the architect and his assistant, this boon, so mutually beneficial, will be gracefully and speedily accorded. It would assist the cause if those architects who may first give the half-day would allow their names to appear in your columns, as an incentive and example to their brethren.—A T-SQUARE.

TRAFALGAR-SQUARE.—Will you do me the honour to draw public attention to the neglected state of this square, once "the finest site in Europe?" The column *still* unfinished! the pedestal on the west side of the square *still* unoccupied! the basins leaky! the paving intended to be ornamental much dilapidated! the fountains, instead of being turned on to their proper height, have become small by degrees and beautifully less! and the dolphins, like many of our M.P.'s, deign not, except in one or two instances, to *spout* at all!—a *coup d'œil* is thus presented that must offend every eye of refinement and taste. Whilst addressing you on this subject, I would suggest a design for improving the façade of the National Gallery, by adding steps to the portico; and as that would interfere with the present roadway, a curve in the opposite terrace and road would, I think, give a good effect to the whole.—W. C. S.

ST. MARGARET'S, RICHMOND.—The Conservative Land Society have issued their plan of allotment of St. Margaret's estate on the 7th of June next. The estate, which is about seventy-five acres in extent, is for the present portioned out into 272 building lots for villas; the lots varying in price from 52*l.* 4s. 6d. up to 475*l.* each. It is hoped care will be taken to preserve the natural and artificial beauties of the site. We observe that a considerable portion of the park is to be preserved as a pleasure-ground, with an ornamental sheet of water. A plot of ground has been reserved at the corner of the avenue for the erection of a church. From the plan it would seem to be contemplated to preserve the mansion erected by the Earl of Kilmorey.

STAINED GLASS.—Messrs. Gibbs have just completed the east window (a triplet) in stained glass, for St. Ann's Church, Brookfield, Highgate Rise. The window is given by the donor of the church, Miss Ann Barnett, of Highgate Rise; the style of the glass is geometrical. Bells also have been put up here, the gift of Miss Burdett Coutts. —— Messrs. Wilmshurst and Oliphant have just fixed a memorial stained-glass window, in the south aisle of Sydenham Church, to the memory of the late Captain Price, who was killed in action, at Burmah, in February, 1853, and to the memory of his mother, Charlotte Savory Price. The window is of the perpendicular style, and of four compartments, containing, under canopies, a subject in each opening, viz. the Nativity, Crucifixion, Resurrection, and Ascension.

GAS IN BRAZIL.—A correspondent of the *Daily News*, at Rio de Janeiro, says, that gas works were opened there on 25th March, being the anniversary of the independence of Brazil. The enthusiasm and delight of the people, he says, were beyond description, and "there was not a single drawback to the success of the first illumination of the city; no smoke, no smell or escape, no necessity for 'botching up' before things would answer." The whole population, he adds, are now in a fever to obtain gas in their dwellings.

CAMBRIDGE ARCHITECTURAL SOCIETY.—The first meeting for Easter Term was held on May 10, when various members were elected, and objects of interest presented, after which the Rev. J. Gibson, M.A. Fellow of Jesus College, laid on the table drawings of a wooden porch lately discovered and restored at Willingall, Essex. The drawings were presented by Mr. J. Clarke, the architect, accompanied by an account of the restoration under his superintendence. Mr. Gilson proposed that Mr. Clarke should be elected an honorary member. Mr. G. A. Lowndes, B.A. in seconding the proposition, gave an account of the Churches at Willingall. The secretary announced an intimation of the joint meeting of the Northampton and Lincoln Architectural Societies, to be held at Leicester, on May 17 and 18. Mr. Lowndes expressed a hope that the society would subscribe towards the memorial to be erected in Ely Cathedral, to their late president. Mr. L. M. Rate, B.A. suggested that they should also subscribe for filling the eastern triplet of St. Andrew's with stained glass, to the memory of the late Dr. Mill. The Rev. J. Gibson, M.A. spoke as to the restoration of St. Andrew's; he announced that the second contract, which included the repair of the walls of the church, was almost finished; but that the funds at present in hand would not allow of the committee entering into another for the roof. Mr. G. A. Lowndes, B.A. as secretary to the Archæological Institute for Cambridge, announced the plan of operations proposed for its visit to Cambridge, in July.

ARTISTS' BENEVOLENT FUND.—The anniversary dinner of this excellent institution at the Freemasons' Tavern on the 13th, was presided over by the Earl of Yarborough, who announced in the course of the evening that his collection of pictures was open for public inspection. The proceedings wanted vigour, but the result, a subscription of 332*l.* was very satisfactory. Various toasts, including the Royal Academy, the British Institution, and other societies for the promotion of the arts, the chairman, &c. were proposed and responded to by Mr. Hart, R.A.; Mr. R. H. Solly, F.R.S.; Mr. Godwin, F.R.S.; Mr. Weekes, A.R.A.; and other gentlemen.

LIVERPOOL ARCHITECTURAL SOCIETY.—At the annual meeting closing the present session, held last week, the two annual prizes of the society given to student members were awarded, first, to Mr. Christ. Ellison, and, second, to Mr. James Hastings. The report of the retiring council having been read, the officers for the ensuing year were appointed, Mr. Hay being president, and Messrs. Frank Howard and S. Huggins, vice-presidents. The president, Mr. Verelst, delivered his retiring address, in which he reviewed the progress of art during the past year, which he thought peculiarly gratifying, especially in France, where men of science and art were highly esteemed, and promoted to national honours. He regretted that there was not more of the same sort of feeling in England.

"BUILDINGS ACT AMENDMENT BILL."—In your journal of the 13th inst. a district surveyor (I assume very recently appointed) alludes to me by name. If he will refer to the office of Metropolitan Buildings, in the Adelphi, with which all district surveyors are of course officially connected, the referees, or registrar, can afford him all the information he requires, and permit him to inspect documents from the 17th of March, 1845, to the 2nd of August, 1851, on the subject. One of these, in February, 1849, ought to be in this district surveyor's own office, or that of his predecessor, being a circular for the guidance of all district surveyors as to one branch of my system. This system, he states, he never heard of, which is very possible, although odd, for the documents include evidence before the House of Lords, in 1846 and 1848, as to my patent rights being illegally interfered with by assumed powers, not warranted by the Metropolitan Buildings Act,—a fact admitted by the registrar on the last of the above dates.—DONALD GRANT.

SOCIETY OF ANTIQUARIES, NEWCASTLE-UPON-TYNE.—The May meeting was held on 3rd inst. in the Castle, when various donations were presented, and Mr. W. H. D. Longstaffe read a paper on "The Ensigns of Swinburne and Wodrington," some account of which may be found in the *Gateshead Observer* of last week, and also of the discussion which ensued.

CAMBRIDGE ANTIQUARIAN SOCIETY.—At the meeting of this society, on May 8, the Master of Gonville and Caius College in the chair, it was announced that the society had become possessed of the antiquarian collections of the late Mr. I. Deck. A paper was read, entitled "A Notice of Two Catalogues of a Monastic Library," by the Master of Jesus College. Mr. J. E. B. Mayor, of St. John's College, read some unpublished letters of M. Prior and of R. Askham, extracted from a collection of manuscripts given by Mr. Baker, of St. John's College.

ELECTRO-TELEGRAPHIC PROGRESS: CABLE FOR MEDITERRANEAN TELEGRAPH.—The first portion of the great Mediterranean cable, the largest ever made, and, in point of circumference, also, the largest at present existing, is just completed and ready for shipment. The screw steamer *Persian*, destined to carry it, will receive her singular cargo the moment she arrives from Alexandria, and the subterranean works on the island of Corsica, &c. will be connected to the cable on its being laid down. The cable is about 110 miles in length, and weighs somewhere about 800 tons. It contains six copper wires or conductors for the fluid to traverse, protected by a gutta percha covering, secured in a hempen rope, and finally surrounded with twelve iron wires, of No. 1 gauge. The projector and originator, Mr. J. W. Brett, profiting by experience, has allowed twenty miles for "slack" and "way," and for depths of the ocean. The moment it is laid, London will be in immediate communication with Cagliari through the cable, and about 400 miles of subterranean wire. Extensions to Malta, Turkey, &c. would give us news from the seat of war in an incredibly short space of time.

WARNING TO WORKMEN.—A painter named Hogg was apprehended at Dundee last week, and brought before the magistrates on a charge of deserting his service without giving previous notice. After examining the defender, the justices ordered that he should return and work fourteen days, the term of warning required. His employer declined receiving him back to his employment, and the justices found him liable in mitigated expenses.

NEW RAILWAY BRIDGE AT ROCHESTER.—The East Kent Railway Company, it appears, have entered into a contract with Messrs. Fox and Henderson, for the construction of a new bridge over the Medway in Rochester. It will be commenced as soon as the plans have received the approval of the Admiralty.

GAS PRODUCTS.—In reply to S.'s query as to the means of obviating the evils of gas products given off in combustion, I know of none so effectual as the use of "Moody's Registered Consumer," which not only prevents all smoke, but collects all the sulphuric acid given off whilst burning, at the same time condensing most of the water generated.—R. S.

"A NOISE IN THE HOUSE."—I see that no answer is given to your correspondent of May 6, headed "Noise in the House." If not too late and you approve, I would say first, it seems very evident that the atmospheric air is the *primum mobile* of the annoying effects, the elevated site of his houses, of course purer state of the air, more susceptible of indicating the effects, caused by anything in form of construction or materials used. I have a few queries to start. Has your correspondent used hollow bricks, formed a hollow wall or air shaft, or adopted any novel scheme of ventilation? If these queries are negatived, has he boarded over the internal surface of any basement walls? A very similar case is described in the *Builder* some time last year, the expansion and contraction of the boarding, caused by the air, giving that undulating or vibrating sound.—T. G.

BATH SCHOOL OF ART.—This school was opened on Monday week. The first class commenced was that for artizans and mechanics, of whom more than forty have entered as students. The school-room already contains casts, models of vases, drawings, architectural plans, &c. A ladies' class has been opened, an evening class for the females of the families of mechanics, and a class for gentlemen's children.

BUILDING FOR EXHIBITIONS AT CHELTENHAM.—A building of the ferro-vitreous order of construction has been erected at Cheltenham for its Horticultural and Art Exhibitions. This building is 40 feet in length and is nearly finished. The first exhibition to be held in it will commence on 1st June next and continue till the 21st of same month, ending with floral fêtes on a large scale. Throughout the whole exhibition there will be bands of music in attendance.

THE IRON TRADE.—Notwithstanding the formal decision of the great body of ironmasters at the recent quarterly meetings not to attempt any rise in prices, we observe that endeavours are already being made to force them up 20s. a ton, or at least to induce an upward tendency preparatory to a declaration of some such rise next quarter-day. We were not far wrong, we fear, in anticipating that this new scheme would be tried on in the intervals between the quarterly meetings, as a spur to those whom dire experience must have made slow to move of themselves any more in so perilous a course.

ANTHRACITE FOR STEAM PURPOSES.—The *Great Britain*, by adopting anthracite coal, it is said, will save in the outward passage to Australia, about 30 per cent. in quantity consumed, weight for weight; also more than 250 tons in stowage; and she will require no detention for renewed supply,—a further saving of at least five days in this one passage; equal in all to a saving of 1-12th.

HYDRAULIC POWER IN ST. KATHARINE'S DOCKS.—We have often said that the time would come when much more would be done with hydraulic power than heretofore, and that it would yet come into general use as an aid to commercial operations even on a small scale. Our anticipations are on the way to fulfilment. Workmen are now engaged in laying down pipes along the whole range of quays in St. Katharine's docks, for the purpose of applying this power to the numerous cranes in the warehouses, &c. A new engine-house has been erected on the east side of the entrance bridge in Lower East Smithfield.

STREET NUISANCES: THE REFLECTORS.—We are glad to hear that the City Commissioners of Sewers have determined to enforce the standing orders on the subject of reflectors, namely, "That all reflectors be placed at an altitude of at least eight feet, measured from the pavement to the base of the reflector, and to project not more than 18 inches, and that they remain only during the pleasure of this court; and that no inscription, or sign of any description, will be permitted on any portion of such reflectors." We wish they would at same time "enforce the standing orders"—if there be any, against that still greater, because much more general street nuisance, the sunblinds *before* shop windows, but scarcely *above* them.

LIVERPOOL TIMBER MARKET.—There has been a steady demand for timber during the past week, particularly Quebec pine, elm, and oak. Of the two latter articles the whole stock is now reduced to less than 20,000 feet. Of pine the stock is estimated as moderate, the consumption of the last three months having risen to nearly 800,000 feet; while of that of Dantzic, about one-half held on 1st February has been cleared off. From the United States parcels of pitch pine continued to arrive, all readily sold from the quay at 2s. 1½d. to 2s. 7¼d. The demand for this article had been greater than for many years past, and that too in the face of advancing prices. Of Deals one cargo had arrived from St. John, N.B. The consumption of this article during the last three months had been on a large scale, and the deliveries exceeded 15,000 standard.

THAMES TUNNEL.—17,881 passengers passed through in the week ending 13th May, and paid 74*l.* 10s.

COST OF THE PRESTON STRIKE.—This unfortunate strike has terminated. It is said that the total expenditure of all the operatives' committees during the thirty-seven weeks of the struggle amounts to 100,000*l.* and the sacrifice of wages will probably be three or four times that sum. In addition to this, there is the manufacturers' loss of profits and dormant capital? When shall we be wise?

TENDERS

For St. Marylebone Cemetery Chapel, and Boundary Walls, Finchley. Messrs. Barnett and Birch, architects:—

Locke and Nesham	£8,689	0	0
Rowland and Evans	8,430	0	0
Pollock and M'Lellan	8,375	0	0
Glenn	8,175	0	0
Holland	7,704	0	0
Higgs and Cullingford	7,486	0	0

For New Congregational Chapel to be built at Kensington. Mr. Trimen, architect:—

Glenn	£6,362	0	0
Watts and Son	6,252	0	0
Bird, J. and C.	5,975	0	0
Sissons and Robinson	5,800	0	0
Thompson	5,656	0	0
W. Higgs	5,454	0	0
Higgs and Cullingford	5,375	0	0
Nicholson and Son	5,288	0	0
Myers	5,230	0	0
Chamberlain	4,979	0	0

For Spring Hill Cottage, Birmingham. Messrs. Joseph James, and Raffles Brown, architects:—

Bransom and Gwyther	£12,370	0	0
Hardwick	12,369	0	0
W. Smith	12,337	0	0
Briggs	11,995	0	0
Myers	11,082	0	0

For Works in High-street, Shadwell, for Messrs. Thomas and Jane Hewetson, under the direction of Mr. Thomas Burton, viz.:—

	Gross.	Old Buildings.	Net.
Lawrence	£2,309	£30	£2,279
Glenn	2,305	50	2,250
Myers	2,274	30	2,244
Coleman	2,250	50	2,200
Locke and Nesham	2,230	50	2,180
Ashby	2,176	35	2,141
Hill (Whitechapel)	2,132	60	2,072

TO CORRESPONDENTS.

"Conveyance of water in drain pipes."—It would be unsafe to use drain pipes in the position described: the pressure would be great. With stoneware pipes, each pipe tested and carefully laid, a successful result might be obtained, but there would be risk even then.

"C. A. W." (a description of the plan recommended by Prince Albert will be found in an earlier number of our journal), "C. E. L." "G. W." "B. L." (we have received no reply), "C. S." "F. A." (it is not probable that the site of Burlington House will be used for National Gallery), "F. R." "E. P." "W. B." "E. F." "W. F. P." "H. B." "T." (unnecessary to say more), "C. S. B." "J. F." "J. B." "E. M." "T. J. P." "Rev. D. M." "W. and Co." "R. J." (declined with thanks), "F. L." "C. W." "F. C." "S. H." "J. H." "J. J. T." "A Chemist," "B. W." "W. G." "A Contractor," "E. W. C." "W. N." "F. E. and Son," "J. A. D." "T. L. D." "C. H. J."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

CHURCH FITTINGS and CARVINGS in WOOD and STONE.

£25. IN OAK

J. RATTEE begs to invite the attention of those interested in the building or restoration of Churches, to his Works at Cambridge, where contracts are taken, and every kind of work executed for the entire restoration and fitting of Churches, &c. with especial regard to economy, effect, and character.

Full particulars, with prices, free on application, or personal attendance when required.

TO FARMERS, MANUFACTURERS OF PATENT MANURES, &c.

THE HITCHIN LOCAL BOARD OF HEALTH are desirous of TREATING with persons who are willing to make use of the LIQUID SEWAGE running from the town of Hitchin, in such a manner as shall not create a public nuisance.—All proposals to be addressed to Mr. GOODWIN, Clerk to the Hitchin Local Board of Health.

LOANS GRANTED.

LONDON EXCHANGE ADVANCE FUND, 2, Adelphi-terrace, Strand, facing the river.

TRUSTEES.

The Right Hon. Lord Erskine. | Sir Edward Graham, bart.

10*l.* to 1,000*l.* advanced on personal or other security. Bills of Exchange cashed. Five per cent. interest on deposits payable in January and July. Forms forwarded on receipt of twelve postage stamps.

ARTESIAN WELLS, Boring for Water, Sinking Shafts, &c.—The Nobility, Gentry, Water Companies, Towns, Baths, Brewers, and Manufacturers of every description, may be supplied with any quantity, by DAVID GREENLEY, Civil Engineer and Patentee of Boring Tools, 10, Cumming-street, Pentonville. Pumps and machinery for raising water from deep wells, boring tools, and well-pipes, for exportation. Men and tools supplied to bore for railroads, minerals, &c.

A SMALL HOUSE, with Workshop attached, situate in Albion-mews East, Hyde-park, TO BE LET. Rent reasonable.—For particulars, apply at No. 24, Duke-street, Grosvenor-square.

NATIONAL PROVIDENT FREEHOLD LAND SOCIETY.—GREAT ARBOR-HILL ESTATE, SLOUGH, Bucks.—The Directors beg to announce that this most desirable FREEHOLD ESTATE, close to the Slough Station, commanding most extensive views of the surrounding country and Windsor Castle, has been purchased for allotments amongst the members. The estate is most eligibly situated for villa residences of a superior class, with a frontage to the high-road from Slough to Windsor, and adjoining the grounds of the late Sir John Herschell, Upton-park. Public meetings will be held at Windsor, on MONDAY, the 22nd, and at the Mechanics' Institution, Slough, on TUESDAY, the 23rd of MAY instant, at SEVEN o'clock in the evening, the Right Hon. Viscount CHEWTON, Chairman of the Society, in the chair. A ballot for rights of choice on the Great Arbor-hill Estate, Slough, and other freehold estates, will take place at the latter meeting, in which ballot all shares previously taken will participate, but should any share be drawn the subscription on which shall be in arrear, such share will lose all benefit from that drawing. The freehold estate at Staines, Middlesex, is now in course of allotment. Eligible building plots, with frontages of 40 feet by a depth of 245 feet, for 50*l.*; frontages of 20 feet, 25*l.* A contract for making the roads, &c. has been accepted, and they will be immediately commenced. Conveyances, free of expense, to the allottees.—For shares, prospectuses, rules, plans, and conditions of sale, apply to Mr. WATKINS, Staines; Mr. JOHN CLEAVE, Tangier House, Eton; or to JOHN POPE COX, Secretary. Shares, 5*l.* Monthly payments, 8*s.* 3*d.* per cent. interest allowed upon all deposits, paid-up shares, and subscriptions six months in advance.

472, New Oxford-street, London; and 80, Cheapside, corner of Bucklersbury.